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## Supply and Demand in the Marketing of Citrus Fruits

By Frank Kay Anderson—An Address Before the Florida State Horticultural Society at Bradenton.

Three notable contributions recently have been made to the literature concerning the marketing of Florida's citrus fruits. Each of these is worth reading and the careful study of those who wish to understand the complexities, and the problems which confront those in charge of the operations which result in turning our citrus crop into spendable money.

Reference is made to a somewhat bulky report of the Agricultural Conference not long since held in Miami under the auspices of the Florida State Chamber of Commerce, to an article entitled Isolating the Germs of Citrus Marketing by Jefferson Thomas, appearing in the March issue of The Florida Grower, and to an article entitled The Elimination of Waste in the Citrus Industry by Professor E. L. Lord of the State College of Agriculture which appeared in the March issue of The Citrus Industry.

Any grower who has read all three of these articles may be prepared to accept the fact that there are many complex problems involved in the satisfactory marketing of our citrus crop; and that no one schedule of action can hope to solve all of them.

At Miami, appearing before a so-called Agricultural Committee of the Florida State Chamber of Commerce which contained not one person active in, or actually versed in, agricultural or horticultural production or

marketing, Mr. J. C. Chase, Mr. Frank L. Skelly, General A.H. Blandin, and Mr. L. B. Skinner, respectively, gave that committee and those present a very great deal to think about. The growers of Florida owe these gentlemen a debt for their action in opening the eyes of that organization to an actual state of affairs, and thus diverting a pragmatic interest on the part of certain persons away from citrus and perhaps into other channels where they are perhaps better versed and are better calculated to be helpful.

That report is a voluminous one, but here and there in it the pungent facts injected by the gentlemen to whom credit has been given stand out in substantial relief against a mass of theory and conjecture advanced by others with no practical experience to give weight to their views.

The article by Jefferson Thomas is of considerable interest to those who have had contact with Florida's marketing problems over a period of some years. It is really directed to those whom we might call advanced students, though some who may have had actual marketing experience in connection with products of other sorts may be able to grasp many points of interest. There is lots of meat in it, even though all of us cannot agree with all its conclusions.

The article by Professor Lord is more easily understood even by those

with short acquaintance with Florida marketing problems. It is also notable in that it deals frankly, even though in diplomatic language, with some problems and complexities which to our knowledge no other writer on this subject has had the courage to meet face-to-face. It is a masterful exposition of certain of these complex phases, though naturally enough all of us may not agree on every item of it.

These three contributions in a way dovetail into each other. They overlap only in places, and only slightly. The three should be read together to begin to obtain a grasp upon some of the many problems which are involved in this important phase of our citrus operations.

As a matter of fact, volumes could well be written on this subject of citrus marketing by any of several persons posted in the various phases of it; and they could then be studied carefully by those with investments in Florida citrus growing enterprises, perhaps with considerable profit.

Those who are assembled here at this point doubtless feel entitled to learn a lot of figures concerning citrus production. You possibly expect now to listen to an assembly of figures covering the present and possible future production of citrus fruits in Florida, California, The Isle of Pines, Porto Rico and other citrus producing areas. Time could be taken up with those figures, but in your

subscriber's humble opinion all the figures which might thus be introduced, however voluminous and accurate, could at the least have only small bearing upon some of the problems confronting Florida, problems which come well under the workings of the law of supply and demand.

There are some who view with alarm the possibility that thirty-five millions of boxes may represent the total of the Florida citrus crop a few years hence. To our own mind thirty-five millions of boxes under certain conditions need not be any more serious a problem than that which confronted those early growers who met in Orlando in 1888, at the first recorded meeting of the sort to consider what should be done with a possible crop of two millions of boxes the following season.

All things are relative. The older we grow, the better do we realize that fact; and the older we grow in experience in marketing citrus crops the better we realize it in that particular connection.

Thirty-five millions of boxes, if ever they come, may present an unsolvable problem; but at any rate we are not up to it yet. Such figures as are available concerning planting do not at any time contemplate the mortality which we know exists among young citrus trees, some of which are unduly exposed to extreme hazards such as we have encountered during this last year, and some of which are not calculated even to produce truly marketable citrus fruits.

Thirty-five millions of boxes as a Florida citrus crop may never arrive. If it does, its problems will depend then upon a multitude of variable factors here in Florida; and an equal number outside of Florida. What will the California crop be at the same time? What will be the crop of Porto Rico, in the Isle of Pines; in the Rio Grande Valley? Who knows? Yet those figures will have a most substantial bearing upon our own equations which we then must work out. What will be the crop of apples that year? What about prunes? All those questions and a lot of others must be answered before even the best posted person having to do with Florida citrus marketing can make any estimate of possibilities which will be worth the paper it is written on.

Given definite answers to all the foregoing questions, it still would be necessary to know a lot of other things, among them what will be the business conditions and relative prosperity of those sections of the country where we are accustomed to sell our fruit before any guess would be really worth while.

Even then a qualified person, if asked for his guess would want to know what about Florida sizes that season, and how much fancy fruit, and how much which would pass as U. S. No. 1, were to be figured upon.

Then comes perhaps the greatest question of all: Are we to market a possible thirty-five million box crop at any time in the future upon the present basis and structure of freight rates, or shall this problem be faced under more sympathetic transportation conditions, which shall allow us opportunity to distribute our products more equally over a larger portion of the United States than we have been accustomed to reach profitably. Shall we then be able to lay our oranges down in Denver in competition with California oranges; remembering that Denver is eighteen miles nearer to Arcadia than St. Louis is to Los Angeles? Why not? In all fairness, equity, and justice are we not entitled to a basis transportation charges which shall allow us as broad a field for competition as is given to any other citrus producing area in the United States?

As a matter of fact is it not as greatly to the interest of the transportation factors serving Florida to see to it that we are given a proper chance to compete, as it is to the interest of the grower? Personally I believe it is, even though up to date we have made but small progress in selling that idea to those in charge of the destinies of the carriers serving this territory.

To-day we face the problem of disposing of fifteen to twenty millions of boxes of Florida citrus fruits much better prepared and with much greater chance of profitable success than did those growers who met in Orlando in 1888 to wrestle with the problem of two millions of boxes. The future in all probability shall develop ways and means as yet undiscovered to us. At any rate there is small need to cross a bridge which in point of fact may never exist.

In the operation of any natural law there is to be found some fundamental point which brings that law most sharply into operation. In looking into the law of supply and demand as affecting our citrus fruits we find that point exists in the fact that the average human is possessed of but a single digestive tract. They say there are exceptions to all rules, but it is sufficient that average humans possess but one stomach each.

If the demand of that stomach has been well supplied with apples or prunes, which are direct breakfast-table competitors of our citrus fruits,

then there is small demand for our oranges or grapefruit. Therefore the available supply of these other fruits, plus the matter of their quality at that time, is always of the greatest significance to us. Bear in mind these are not the only things with which our citrus fruits must compete for public attention. There are numerous other fruits and other articles of diet which also compete for attention with our own products; but apples and prunes under the habits of eating which to-day prevail in the United States furnish the most formidable and direct competition. The visible supply of these vitally affects the demand for citrus fruits.

Let citrus market prices climb just a little too high, let the eating quality of citrus fruits be a bit unsatisfactory, and upon thousands and thousands of tables apples and prunes come to the fore and citrus fruits disappear into the background. And in many thousands of lunch boxes apples appear in lieu of oranges. The adjustment thus brought about is quickly reflected in the market prices for citrus fruits.

Given a season when the balance of supply and demand as affecting apples, prunes and citrus fruits is satisfactory from the standpoint of the citrus producers, then we have got to figure total citrus production from all producing areas, and the relative quality of the offerings from each area at that time. In that connection it is well to remember that of the total of citrus to be sold in the markets up to now Florida is supplying only about one box of each four boxes sold. Remembering that, we also shall remember that for Florida to bring about, through special merchandising or advertising effort, any great change in the eating habits and preferences of the consuming markets, such as shall materially change the prevailing demand, it will be necessary, so to speak, for the tail to wag the dog.

"Florida produces the finest oranges in the world." That is a quotation. It is something you may readily enough hear anywhere in Florida almost any time. It is one of those half-truths which is most dangerous. The whole truth is that Florida produces a limited amount of fancy grade oranges, which are literally without a peer among the oranges produced elsewhere. That this is true is evidenced by the fact that even during the unsatisfactory market period in January 1927 Florida oranges of this character were selling in the New York market at and above eight dollars per box, wholesale. This was about a dollar per box above the prices

then being realized for the finest offerings from the Pacific Coast.

However, Florida's production of such oranges is limited. On the same days when the finest Florida oranges are running well above California's finest we find it almost invariably true that the average prices realized for all Florida oranges offered is either slightly or considerably below the average for all California's offerings. That can only be due to a preponderance of off-grade, undesirable fruit from Florida which can thus bring the average prices down. The word "undesirable" in that connection is used advisedly. It is relatively undesirable from the standpoint of the buyers, and from the standpoint of the consuming public whose tastes and favoritisms the wholesale buyers accurately reflect, or else the bidding for it would be more active. Whatever may be the opinion of those who painstakingly produced it, their opinion is valueless. In connection with the merchandising and sale of oranges, as in connection with the merchandising and sale of any fruit or any other article it is only the opinion of the ultimate user which can count for long.

Apple growers may be all out of sympathy with your tastes in the selection of apples for your own consumption; but it is the sum total of your tastes, and those of all the others who must be depended upon to buy the apple crop, which settle the question of which apples are the most profitable to produce.

Looking all the facts squarely in the face, based upon the preferences of the consuming public of the United States, as definitely exhibited in sales records covering several years and a total of millions of boxes of citrus fruits, we find that California has the best of us in the sale of oranges, while we have a corresponding, if not far greater, advantage over California as far as grapefruit is concerned. Our competition on grapefruit, that is the competition which makes our selling forces get out and hustle comes from the Isle of Pines and Porto Rico up to now. What the Rio Grande Valley of Texas may mean to us at some future date is as yet problematical.

Are these differences due to any superiority of selling machinery handling the products of these different areas, or are they due to inherent advantages in the products themselves? That is a question which should be faced fairly and squarely.

My answer to that question, based upon my own experience and observation, and as careful a study of the question as I am capable of making,

## THE CITRUS INDUSTRY

in which study I have been fortunate in having access to a large amount of reliable information from Florida, California and Porto Rico, and from a great many markets, is that it is due almost wholly to noticeable differences in the fruit itself as it comes upon the consuming markets, though there are some modifying factors which sometimes complicate things. Chief of these is the large amount of mid-season round oranges which conditions require that Florida shall market within what is relatively a very brief period, a period all too short for the requirements of the situation.

Careful examination into the selling machinery employed by the different producing areas fails to develop the presence of any super-men in charge of any of the selling operations of what we might style our competition. On the other hand, if it is fair to judge by the standing of men at conventions of the fruit trade, and in the operations of the American Fruit & Vegetable Shippers Association, and in other places which bring them together, we find that the men at the head of our Florida citrus selling operations apparently stand at the very top in the regard of the fruit trade generally. Careful search also fails to reveal any particular merchandising plan put into execution by sellers representing any other producing area which possesses any substantial points of superiority to the plans and policies followed by the leaders in Florida citrus selling. That is, we fail to find any plan of selling which apparently reveals any superiority of intellect or experience, though we do find a natural tendency to take the fullest advantage of the fact that citrus fruits from some other sections are not so highly perishable, do not deteriorate so quickly after being taken from the trees, as do our fruits. Also advantage naturally is taken of the far more liberal transportation arrangements and freight rates which are elsewhere enjoyed.

Plenty there are who will argue that California possesses manifest advantages in its selling machinery over Florida. I, for one, must disagree with that view. Such persons generally base all their arguments on oranges, and overlook grapefruit and lemons. My own idea is that if the California method was so infinitely superior as far as oranges are concerned, it should manifest at least some of that superiority in connection with grapefruit; and it should manifest that superiority, if such superiority actually existed, in connection with lemons. Yet to-day Flor-

ida grapefruit reigns supreme, and as far as California is concerned, unchallenged. Also California to-day has a far greater problem on its hands with respect to the profitable distribution of its lemon crop than Florida has faced in connection with oranges. To date California's lemon selling problem is most serious, and there is apparently no solution of it in sight, notwithstanding the fact that ninety per cent or more of their lemon sales are in the hands of one organization which is widely heralded as being the largest citrus selling organization in the world, and which is supposed to represent the acme of selling efficiency. At least it is the one most frequently held up as an example by those who would argue that Florida's weakness is chiefly developed in its selling.

The law of Supply and Demand is inexorable. It governs effectively, and very definitely, all our commercial activities. It has not yet been surmounted successfully by any man or body of men in the history of commerce.

It is true that it has at times apparently been evaded by groups or combinations in a given industry, but when all was done, and the obscuring smoke screen had drifted away, it was found that the result of the most careful preparation and scheming had been only to postpone for a time the working of the law of Supply and Demand, and that in the end the results were the same.

Supply must be calculated to meet demand, in all transactions where profit is sought. Failure to coincide supply with demand can only mean a loss to the producers.

Non-perishable products, which can be stored successfully for considerable periods, sooner or later have to yield to demand. Perishable products necessarily yield to it more quickly, in fact at a rate which is directly proportioned to their perishable nature. Citrus fruits are perishable, and therefore prices quickly respond to existing demand; but at that not so quickly as they do in the case of peaches or tomatoes which are even more perishable by nature.

The theory that control of volume of sales in any field of commerce carries with it a corresponding control of prices cannot be supported by facts from any authentic source. The law of supply and demand is always on the job, whether it be in the field of steel, iron, cement, lumber, flour, canned goods, fruits or what not.

Large combinations in the field of manufacturing in the United States have proven to be beneficial, but analysis of the benefits derived there-

from tends to show they have come most largely from the elimination of wasteful practices in the particular industry and substantial reduction generally in the costs of manufacture.

No one man, and no one organization ever has shown so keen a knowledge and so ready an appreciation for the workings of the law of supply and demand as has Henry Ford and the organization he heads. Time and again in years past, with no worth while competition in their particular field, price cut has followed price cut, to the amazement of the public in general. To most people these reductions in price at the time appeared uncalled-for and foolish; but that organization knew, and proceeded to demonstrate, that each such reduction materially broadened the demand for their product. The remunerative nature of their reward for carefully observing and taking full advantage of this natural law is sufficiently well known not to require comment.

In view of the ascertainable facts from the whole field of citrus selling, it does not seem logical to conclude that we in Florida can profit to any extent by putting all our citrus eggs into one selling basket.

On the contrary, we are selling a perishable product which belongs actually in the luxury class, for our consumers can if necessity requires get along very well without our oranges or grapefruit; and we need to keep up the strongest possible selling pressure. How many automobiles and how many vacuum cleaners would be in use to-day if all the automobiles or all the different vacuum cleaners had been sold by one concern? That is something to think about.

What then can we in Florida do to increase profits in citrus production in logical accord with the workings of supply and demand? Here are some things we can do?

1. We can learn how to keep our production costs at a minimum consistent with the production of good fruit.

2. We can begin at the very bottom of production with the aim of giving consumers as nearly as possible what they have demonstrated they want.

3. We can with profit study the lines of action followed by those whom we know have achieved substantial success right here in the Florida citrus field.

4. We can earnestly strive to the end that we may spread out our harvest over the longest possible time by natural, though not by artificial,

means.

5. We can quit kidding ourselves by averring that, "Florida produces the world's finest citrus fruits."

6. We can awake to the fact that we have here in Florida a good many acres of what are in point of fact "beginners' groves", which are not calculated to compete with groves either here or elsewhere which are commercially fit, and commercially profitable; and further we can awake to the fact that necessarily we must eliminate these "beginners' groves" from our calculations, or at least eliminate them until their owners come to a realization of facts and begin an endeavor to work them over into commercial groves.

7. We can divorce real estate selling and commercial fruit growing.

8. We can frown down those who for their own purposes would keep our citrus business constantly before the public in this or that newspaper to the end that they may prove their contentions, either that it is the most profitable business on earth or the most unprofitable, according to the view they advocate.

9. We can quit allowing ourselves to be kidded by persons outside the industry who have axes of their own to sharpen on our grindstone.

10. We can quit kidding ourselves that some legislative or other miracle some day will change everything and put us on the easy road to the end of the rainbow.

11. We can study citrus history more and embrace citrus hysteria less.

12. We can work to minimize the effects of citrus politics in our marketing operations; and to substitute healthy rivalry for destructive competition.

13. We can educate ourselves out of the belief that ours is the only citrus producing area which has any troubles or difficulties. Only a trip into one or more of these other areas is necessary to do this, if a reading of their citrus literature does not.

14. We can very profitably learn to back up the efforts of those scientific men who would teach us to do better if given opportunity, and to see that in the future none of these are allowed to be crucified by any whom plain words may offend.

15. We can congratulate ourselves that more and more as time passes we are learning to submerge our personal feelings and to work together for the common good. First the Florida State Horticultural Society, later the Growers and Shippers League of Florida and the Fruitman's Club are milestones on our path of progress toward a greater unity of pur-

pose and endeavor.

16. We can remember that here in Florida is the only natural home of the orange within the United States; and that we are justified in the fullest faith that, come what may, a substantial citrus industry always shall survive in Florida.

All these things we can do, and other things just as important; and all will aid in trying to make the citrus industry of Florida properly and profitably responsive to the workings of the law of supply and demand.

Or else what?

Why, we can do as did an old fellow down near Bradley Junction when Honorable H. J. Drane was first elected to congress. He wrote:

"I voted for you, and I am glad you got yourself elected. You look to me like a good man.

"Now here is a chance to make a name for yourself, and I want you to do it right away. You just get up a bill and have it passed abolishing that law of Supply and Demand; it has been playing hell with the farming business for fifty years, and something should be done about it."

## Attention

### Horticulturists

At the last meeting of the Horticultural Society held in Bradenton there were presented many valuable papers on important and timely Horticultural subjects. Some of these are well worth many times the cost of membership.

In addition, the report will contain the result of the work of Messrs. Chace and Church, of the Bureau of Chemistry of the United States Department of Agriculture, on frozen fruit. These results were not ready in time for the Bradenton meeting but will be ready for publication in the Proceedings of the Society. These results will appear nowhere else before they are published in the Horticultural Society Proceedings. This report is one of several papers that were read by title before the meeting.

There is yet time to become a member but it is urgently requested that those who wish to become members and receive the Proceedings present their application before May 15th. Memberships received after that date will not be included in the report and as the funds of the Society are very short, few extra copies will be published.

Send application for membership and the \$2.00 membership fee to: W. W. Yothers, Asst. Secretary, Box 719, Orlando, Fla.

# Recent Horticultural Developments in California

By T. Ralph Robinson, Physiologist, Bureau of Plant Industry U. S. Department of Agriculture (Office of Crop Physiology and Breeding Investigations). Paper Read at Meeting of Florida State Horticultural Society at Bradenton.

At the last meeting of the Society I outlined for the members some observations I had made for several seasons past on the fruiting of avocados, especially as to their dependence on cross-pollination. This subject had received considerable attention in California in the last few years through the researches of Dr. A. B. Stout and Mr. Oange Clark. The results and conclusions of these two investigators were somewhat at variance and more recently several horticulturists of standing have stated that there was no real pollination problem in California. My recent trip to California was made in part to reconcile these views, having a belief, founded on observations in Florida, that both attitudes might be right, depending on the climatic factors influencing flower behavior.

The Fuerte variety has become almost the standard avocado variety for California, the trees of this variety now being planted probably equalling or exceeding the total of all other varieties combined. I, therefore, gave first attention to this variety. The spring was rather backward to observe open blooms in some sections but the trees were still holding fruit from the last crop and gave opportunity to draw some conclusions as to the practical importance of interplanting of varieties. The experience of growers was also, of course, sought at every opportunity.

The divergence of views, above referred to, seems to be readily explained by the climatic differences where the main investigations were carried on. Dr. Stout's work, while a visiting member of Pomona College Faculty at Claremont, was confined to the foothill groves of that region. Mr. Oange Clark working at Point Loma, a peninsula lying between San Diego Bay and the Pacific Ocean, was dealing with a different set of climatic factors, a cooler, more equable climate, which shows up the flower mechanism in such a way as to make self-pollination entirely possible, especially with the Fuerte variety. It is worthy of note that in the foothill region, near Claremont, I learned of a ten-acre Fuerte grove in a solid planting, that had been entirely dug up because of poor fruit-

ing, yet along the coast where growth conditions are at all favorable there seems to be no serious difficulty in fruit setting, even when there is no opportunity for cross-pollination. Even in the foothill sections in some seasons there may be brief periods of weather favorable to self-pollination and isolated trees may then fruit well, as I observed in several instances.

The situation is entirely comparable to that obtaining in portions of Florida. A single isolated Fuerte tree, near Blanton, has for several seasons past produced more fruit than a ten-acre grove in solid planting of the same variety near Lake Eloise. A study of the flower behavior of the Blanton tree during the cooler weather up to late March showed overlap each day between the receptive and pollen-shedding flowers and fruit continued to set during the time. Early in April when flower studies were again made this overlap no longer occurred and no more fruit was set.

In the ten-acre Fuerte grove at Lake Eloise the flowers showed little or no overlap and set very little fruit at any time. A row of Spinks avocados adjoining the older Fuerte grove came into flower for the first time in the spring of 1924. The row of Fuerte next to Spinks set a full crop of fruit that season; the next row back had a scattering set of fruit; the third row had one tree (out of twelve) with a few fruit; the fourth row and balance of grove was devoid of fruit. The flower behavior of Spinks (Class A) fits it to be reciprocate with Fuerte (Class B) and Spinks also fruited well, evidently benefitting by the close association. Thus it may be true in one situation that cross-pollination is not essential, and yet vitally important in other places.

It is significant that the large expansion of avocado planting in California is taking place in the southern counties along the coast or near enough to get the oceanic influence. This expansion is very great, I can assure you, and plans are being made to make the avocado widely known in the Eastern markets and a year-round competitor with our

other fruits. This expansion is temporarily slowed up, simply because the nurseries are sold out and trees are no longer available but the acreage already set, barring a serious disaster will soon produce a crop that will be felt in the markets of the country. Standardization of varieties, grades and pack is being worked out largely through the California Avocado Association, which has adopted a trade name,—"Cal-avo" for the avocado. Owing to different seasons of fruit setting in different localities and a long period of ripening the Fuerte variety alone is shipped almost every month of the year from California and may be called the standard California variety. It seems to be as thoroughly adapted to the California climate as it is unsuited to Florida conditions, at least in the southern half of the state. To suit market requirements Florida will need to have more varieties, no doubt, than California (just as we do in citrus) and all the evidence on pollination indicates that the wise plan would be to interplant reciprocating varieties (of Class A and Class B, as listed in previous Reports of the Florida Horticultural Society, 1895 and 1896) in order to get all the benefit possible from cross-pollination. The Trapp is the only Florida variety that gives evidence of being consistently self-fertile, and it supplies fruit only during the fall months. Furthermore, it appears to be adapted only to a relatively narrow range of territory on the lower East Coast.

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In the citrus field in California the principal trend of interest to Florida fruit growers is perhaps the gradual increase of Valencia acreage at the expense of the Navel acreage. There are probably several factors in this change, but one of the chief factors is the fact that the Valencias are chiefly marketed after the Florida crop is out of the way. The Navel Orange is especially subject to "June-drop" resulting in low production in some districts—a factor that has no doubt resulted in some reduction in area devoted to Navel production. This increase in Valencia production, of course, means that more and more the early orange

shipments from Florida, in October and November, are going to meet competition with the "hold-over" California Valencias, dead ripe and usually of good size. It, therefore, becomes especially important to plan fall shipments of oranges most carefully, to ship only palatable fruit of good size and color in order to hold the good will of the dealers and of the consuming public. In the early Navel districts of California it has been learned that the Thompson Navel, which originated as a bud-sport of the Washington Navel, is from two to three weeks earlier in maturity than the true Washington Navel, a difference great enough to allow much of this crop to go into the Holiday markets. This fact is resulting in some new planting of Thompsons and the top-working of lemons or Valencias to Thompson navel in districts better suited to Navels.

Lemon production in California for several seasons past has been in a position somewhat analogous to grapefruit in Florida—prices dragging for a good part of the shipping season with good prices for only the best fruit and then only at periods of heavy consumption. The utilization of off-grades and "tree-ripe" fruit in the manufacture of by-products has been a life-saver for the lemon growers, just as grapefruit canning promises, at least, to help out the grapefruit producer in Florida. If the market can be relieved of the competition resulting from shipping low-grade and off-size fruit, the producer of good fruit, well graded and packed, should find a ready and profitable market for his out put.

In the California lemon situation, in addition to low prices, there has been much concern over a poor tree condition that seems to be widespread and to present many puzzling features. In the weakened condition much of the fruit ripens on the tree before reaching market size—a serious loss since these "tree ripes" cannot be stored and must go to the by-product factory unless there happens to be strong market at the time.

For a time this condition was thought to be due to a series of dry years, but more recently suspicion has been directed toward the budding stock. When lemon-growing was first begun on a commercial scale the stock commonly used was the sweet orange, but its susceptibility to gum diseases lead to the adoption of the sour stock almost exclusively. On the sour stock the older trees are now showing rather marked overgrowth of the scion, while trees of similar age or older, on the sweet stock, seem in better condition than those

#### THE CITRUS INDUSTRY

on the sour stock. The agitation against sour stock is not confined to the lemon top and many nurseries are now growing almost as many sweet seedlings for budding as sour, notwithstanding its admitted greater susceptibility to gum diseases. In fact, I was astonished to learn from the Fruit Growers Supply Company that they were securing this year, to furnish to California nurserymen, as many sweet orange seed as the sour orange—surely a revolutionary change for a region solidly committed to the sour stock for at least two decades. With a better knowledge of how to deal with gum diseases, and especially how to prevent the conditions favoring such troubles, the growers evidently feel fairly safe in reverting to the sweet stock with its greater vigor of growth and higher degree of apparent scion compatibility.

In this connection it might be of interest to give some figures as to the Growers Supply Company's service to the citrus nursery business in California. This Company not only buys the seed in large lots—which seeds come almost exclusively from Florida—but also furnishes most of the budwood. About ten years ago when Mr. A. D. Shamel, of the U. S. Department of Agriculture, had first demonstrated the value of "Performance record budwood", budwood secured from trees of proven production—the problem presented itself of how to make this sort of budwood available to growers and nurserymen under conditions which would permit each lot to be safely certified. The California Fruit Growers Exchange took an interest in the problem and in cooperation with the U. S. Department of Agriculture organized a "bad supply Department" in their subsidiary organization, the Fruit Growers Supply Company.

This organization has to date supplied to the nurseries of California about three billion buds, each one of which is traceable to an individual bearing tree of known production and quality. In addition to this number, a half million more performance record buds have been used by a single nursery maintaining its own progeny trees, and able to furnish a straight record of the source of each bud used.

This plan of securing buds calls for an elaborate system of record keeping and undoubtedly adds to the initial expense of tree growing, but in planting a grove what does it matter whether the shield bud costs one cent or six cents? The growers could well afford to pay many times that difference if he could always be sure

May, 1927

of what he were getting. The uniform appearance of the progeny groves and the high average of fruit quality produced from such budwood is sufficient warrant for the continuation of this system in California.

As most of you know a Progeny Grove is in process of development at the Citrus Experiment Station at Lake Alfred, with the object of affording in the future a reliable source of budwood from record trees for Florida.

Before leaving the subject of stocks for citrus in California I would like to make brief mention of one feature that is receiving considerable thought and experimentation, not only from the State and Federal research investigators but from the growers themselves, that is, vegetative propagation. Occasionally, in a grove, say a lemon grove where most of the trees are in poor condition and all on sour stock, a tree or several trees occur which are vigorous and where the bud union gives no evidence of incompatibility. How to get more stocks exactly like these is the problem—they seem to be the result of chance seedling variations or possibly are natural hybrids.

The simplest way seems to be to induce the roots to sprout and then to cut these sprouts up and root them in a suitable rooting bed. Some of these old stocks fail to send up sprouts even when roots are severed and exposed and then the only recourse is to try rooting piece cuttings of the root itself. This is much more difficult and usually fails unless very large pieces are used. A method of grafting a scion into the piece root, however, offers some chance of success even with small roots. This resort to vegetative propagation may look like a painfully slow process and is not at its present stage recommended for commercial practice, but it may eventually be the means of making available stocks of uniform vigor, disease-resistance, and compatibility to the scion chosen.

Once a start is made with vegetative propagation, the very material that is now cut off and thrown away in a citrus nursery, viz., the top of the stock after bud is healed in, would furnish the cuttings for the next season's budding stocks; so the method is not as impractical as it may seem at first thought. The Solar propagation frame, demonstrated by Mr. J. H. Jefferies at the last meeting of the Society, affords a cheap and practical method of forcing fine twig cuttings to strike root.

California, with its great extent from North to South, its mountain

## THE CITRUS INDUSTRY

ranges forming vast valleys isolated both climatically and topographically, lends itself to great diversity in horticulture.

One of the more recent fruit industries, just attaining commercial status, is that of date-growing. It may be of some interest to Floridians to learn something of this infant industry even though it has no place in our horticulture, at least for fruit production. The date palm of course, grows well in Florida, but requires a degree of heat and atmospheric dryness for commercial fruit production, not to be found outside of truly desert areas.

Although the first plantings of imported date varieties, introduced by the U. S. Department of Agriculture, were made about twenty-five years ago in California, the development has been slow and faltering for many reasons. First, it had to be learned what varieties (out of hundreds known in the Old World) were adapted to the American deserts where irrigation water was available; these varieties could be propagated only by rooting the offshoots or base suckers from the bearing or female palm, a slow and, at first, a difficult process; and when fruit was finally secured much had to be learned about handling and packing the fruit before the business began to look commercially promising. The whole technique of date culture is a highly specialized field but so intensively has the date palm been studied by the specialists of the U. S. Department of Agriculture—men like Swingle, Fairchild, Mason and Kearney, that the Old World is now calling on Americans to render them assistance in their difficulties and even to supply them with disease-free offshoots of their own precious varieties. Just now Dr. Swingle is en route to Algeria to attend a conference on date culture; two years ago Prof. Mason of our Bureau was loaned to the Sudan Government to advise the Sudanese and give them the result of American experience.

Last year the crop of dates in the Coachella Valley, suitable for sale either fresh or packed, amounted to about a half million pounds. Besides this amount there was probably two to three hundred thousand pounds produced in the Imperial, Yuma and Salt River Valleys, and a considerable quantity of cull dates which can be utilized in various ways after seeding and shredding. When it is considered that our total imports, chiefly from Mesopotamia, amount to about seventy-five million pounds annually the American production seems very small but this produc-

tion is increasing about fifty per cent. annually and the output is of such a character that it readily takes precedence over the imported article. Not only is the American production limited to the finest varieties seldom imported into the United States, but the sanitary methods of handling and packing alone warrants the buyer in paying a premium over the rather messy imported product. At present the principal packing date is the Deglet Noor or "date of the light", especially well adapted to the Coachella Valley. Later, other varieties of almost equal merit, suited to other valleys having different climatic conditions will come into production so that the American connoisseur will in time purchase dates according to his variety preference, as he now does oranges, apples or grapes. A decided novelty to the American consumer will be the date known as the "bread date"—dry and hard, capable of long storage and preferred by the Arabs to the best soft varieties.

The high food value of the date renders this addition to the National cupboard of especial importance. There is a picturesqueness about a date orchard and a fascination in overcoming the harshness of the desert that is destined to win for this infant fruit industry a unique place in American horticulture. For one thing, the initial outlay in starting a date orchard is so great that it will attract only the man of some capital and a lot of determination, a willingness to go through the "burning sands" day after day while his precious palms are being brought to fruiting. The desert sands are far from unpleasant in the winter, spring and late fall but during the fruit-ripening season of August and September temperatures from 110 degrees to 115 degrees are not unusual and occasional maxima even higher are reported. The lack of humidity, however, renders these temperatures much less formidable than they sound, and it is this heat that is necessary to develop the high sugar content required in a first-class packing date. The heat requirements differ widely with different date varieties but that is a long story by itself.

A sample package of the Deglet Noor date, grown in California (shown) will enable you to judge for yourself something of the standard being set in date growing and date packing by American pioneers in date culture. In this newest field of horticulture as in the citrus field American producers are destined to lead the world.

## Fruit Growing Under Irrigation Important In Some Parts of West

The production of fruits and nuts on irrigated land in Western States, made possible by the favorable climate, has become an important part of the agriculture of those regions, says the United States Department of Agriculture. A study of practices developed on irrigated orchards in the Pacific slope and that portion of the Rocky Mountain States lying in the drainage basin of the Pacific has recently been published by the department in a revised Farmers' Bulletin No. 1518-F, entitled "Orchard Irrigation."

The selection of a suitable site is one of the most important factors in establishing a successful irrigated orchard, according to the bulletin. Success involves also the setting aside of good land, the proper use of irrigation water, and prudence in making the somewhat heavy expenditures required to purchase trees, and to plant and care for them until they begin to bear. It is likewise essential to find out the adaptability of the variety of trees to be planted to the climate and soil of the locality, the adequacy and dependability of the water supply, the risk of high water table and alkali, the wages of labor and its quality, and the probable cost of packing, inspection, transportation, and marketing of the fruit.

The time and frequency of fruit-tree irrigation have been found by the department to depend primarily on the soil-moisture conditions within the root zone. The depth and spread of the roots is of importance in this connection, since little or no available moisture may be found in the top foot of soils supporting a vigorous tree growth. Some diseases of orchard trees may, in a measure, be controlled and frequently an injury prevented by judicious irrigation.

A copy of Farmers' Bulletin 1518-F, which contains detailed information relative to the establishment and operation of irrigated orchards, may be obtained free, as long as the supply lasts, upon request to the Department of Agriculture, Washington, D. C.

In the 10 years ending with 1925, agricultural cooperation increased in every section of the United States except a few remote corners.

Now is the time for all good farmers to come to the aid of their crops.

# The Citrus Industry

Exclusive publication of the Citrus Growers and Shippers

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## CITRUS CALENDAR FOR MAY

### Timely Suggestions for Grove Work During the Present Month

Prune late bearing trees as soon as crop is removed.

Spray with oil emulsion or fumigate for control of White Fly and scale.

White fly may be controlled by a fungus parasite; calculate the number of cultures that you will need; write to the State Plant Board, Gainesville, for them.

Cottony cushion scale may be controlled by the Vedalia or Australian lady beetle.

Spray grapes with 4-4-50 bordeaux mixture plus 1 pound of lead arsenate to 50 gallons of spray to control scab and chewing insects.

## THE HORTICULTURAL MEETING

The fortieth annual meeting of the Florida State Horticultural Society held at Bradenton on April 12-15 was in many respects one of the most interesting of the annual gatherings of this society. On very few occasions have better programs been presented or greater interest shown by those in attendance. Seldom has greater hospitality been shown than that which marked the Bradenton meeting.

In the selection of Winter Haven as the meeting place for the annual gathering in 1928 the convention displayed as we believe great wisdom. Meetings of the Horticultural Society should be held not only at some centrally located point within the natural horticultural belt, but should also be accessible to citrus groves and citrus nurseries, since citrus is the predominating note at all these gatherings. Winter Haven is centrally located from both geographical and horticultural lines.

Equal wisdom was shown in the choice of officers. L. B. Skinner, president, and Bayard F. Floyd, secretary, who have ably served the society in official capacity for the past several years were unanimously re-elected. Certainly no better choice could have been made and the unanimity of their re-election was a deserved credit to the efficient service they have rendered in making the society the magnificent institution which it is.

The selection of W. A. Sessions of Bonifay as vice-president of the society is a deserved recognition of one of the most able and active horticulturists in the state and to the rapidly developing satsuma section in West Florida. N. A. Reasoner of Oneco who was elected treasurer needs on introduction to Florida horticulturists. As head of the Royal Palm Nurseries he occupies a leading position among the nurserymen and horticulturists of the state.

Under the leadership of these officers the Florida State Horticultural Society may look forward to a year of progress and activity.

## THE ALL IMPORTANT FACTOR

The Citrus Industry gives its whole-hearted and unqualified endorsement to any movement which promises betterment in the present unsatisfactory marketing conditions obtaining in the marketing of Florida citrus fruits. That there is room for marked improvement in marketing practices, there is and can be no doubt. Every well-informed shipper and grower in the state realizes this fact and all are seeking some satisfactory solution of the problem.

However, The Citrus Industry wishes to emphasize the fact that the solution of the growers' problems does not rest alone nor primarily on a satisfactory adjustment of marketing arrangements, important as this factor unquestionably is. A far more important factor in the stabilization of prices, so far as Florida citrus fruits are concerned, lies with the growers and has to do with the production end of the industry. So long as Florida produces less than 15% of bright fruit just so long will the grower of off grade and poor appearing fruit be confronted with the fact of unsatisfactory and in many cases unprofitable prices.

The trade demands fruit of fine quality and tempting appearance and this demand is growing more and more insistent from year to year. Until Florida growers meet this demand by producing fruit of quality and appearance (particularly appearance) the matter of satisfactory prices will not be attained regardless of what marketing conditions may control.

It is a truth which even the competitors of Florida growers are forced to admit, that Flor-

ida produces the very best citrus fruits grown. Prices obtained on the auction markets for the choicest Florida fruits furnish undisputable evidence of this fact. The trouble is that only an infinitesimal portion of Florida's citrus offerings measure up to the high standard of the fancy product.

If present conditions were reversed and Florida produced 85% of bright fruit and only 15% of lower grades an entire crop of twenty million boxes could be sold at a profit. The 15% of fruit of poor appearance could be utilized by the by-products plants at a profit to the grower while the 85% of brights would dominate in the consuming markets.

The Citrus Industry is glad to see the agitation for better conditions in the marketing of citrus fruits, but it cannot too strongly emphasize the fact that the major factor in the solution of the growers' problems rests with the grower himself in the production of fruit which meets the demand of the consumer in quality and appearance. When we have attained the maximum of perfection in this regard, many, if not most, of the grower's problems will be found of easy solution.

#### IMPORTANT CONFERENCE ARRANGED

*Citrus Industry marketing*

Secretary of Agriculture Jardine, believes that he has discovered a plan which will solve the marketing problems of Florida citrus growers. So confident is the Secretary of Agriculture that his plan is feasible that he recently summoned Florida Commissioner of Agriculture Mayo to Washington for two days conference on the subject.

Just what transpired between the U. S. Secretary of Agriculture and the Florida Commissioner of Agriculture is not known. The result of the conference, however, was that Commissioner Mayo returned to Florida, went before a meeting of the Fruitmen's Club in Orlando and presented to that body an invitation from Secretary Jardine to appoint a committee to confer with him on the marketing plans he has in mind.

The invitation was accepted by the Club and a committee appointed to meet with Secretary Jardine at some date early in June. At this conference, Secretary Jardine proposes to place his plan before the representatives of Florida marketing agencies with a view to co-ordinating the efforts of these agencies to control distribution and stabilize prices.

Until definite knowledge of the plan proposed by Secretary Jardine is forthcoming it is too early to predict what the outcome of the conference may be. It may be said, however, that the marketing agencies of Florida will welcome any constructive suggestions for the betterment of conditions existing in the marketing of citrus fruits. If Secretary Jardine has a feasible plan to offer he will find the Florida distributing agencies more than willing to cooperate with him in bringing about the reforms desired.

Florida marketing agencies, both co-operating and independent, have long sought some feasible plan of action and cooperation of effort which would bring about a more orderly system of distribution and a more

stable market. If Secretary Jardine has really the solution for which the Florida agencies have so long sought, he will find Florida distributors and Florida growers ready to give him the highest degree of support.

The conference at Washington with the announcement of Secretary Jardine's real plans and the re-action thereto of the members of the Florida committee will be awaited with interest.

*Orange juice*

#### ORANGE JUICE COMING INTO ITS OWN

That orange juice is fast superceding lemonade as a popular drink at soda fountains is the unqualified statement of Austin Holcomb, editor of California Produce News, in a signed statement printed in the New York Produce News of April 23. Note these quotations from Mr. Holcomb's article:

"Lemonade? Why, Mr. we have not had a call for one for a month. Can give you plenty of orangeade and limeade. Orange juice? Well, that's like it. We sell more orange juice these days than all others combined."

"This was the comment the other day of a soda fountain manager in one of the busiest Los Angeles drug store. This particular fountain during the rush hours keeps five men serving fountain drinks. A visit was made to a dozen other fountains—the same reply from each, no one now calls for lemonade. A dozen large retail growers admitted that they paid no attention to orders for lemons when such came, 'Which was only occasionally.'

"California lemon growers are in a bad way. What is more discouraging, there is little cause for hoping for an early improvement. The United States has swung pretty near 100% to orange juice. In the meantime demand for the old time lemonade has simply dried up. The orange men are happy and smiling over the great increase in consumption—the lemon men no longer smile. Five years ago the lemon men frequently sympathized with the orange men. Today it is a different story."

If what Mr. Holcomb says is true, and most people who know the citrus game will admit that he at least knows his lemons, his statement should contain an element of encouragement for Florida orange growers. If the lemon is losing out to oranges in its native state, how much more must this be true when the lemon goes from home?

Continuing his comparison between the relative consumption of oranges and lemons, Mr. Holcomb sees every reason to look with optimism upon the future of the orange industry, while he can see nothing but disaster ahead for the lemon men.

Certainly no one engaged in the citrus industry, either in California or Florida, has any ill will towards the lemon grower or wishes him any financial loss. However, looking the situation in the face in the light of Mr. Holcomb's figures, it is easy to see where the orange grower may hope to benefit from the ever increasing popularity of the orange juice as a fountain drink. In this connection it is not amiss to point out that Florida oranges are the sweetest and juiciest oranges grown and as such are peculiarly adapted to fountain use.

**"OVERSTATEMENTS" SHOULD  
BE EXPLAINED**

Florida shippers are vitally interested in recent disclosures coming from Washington in which the Fruit Growers Express Company is charged with having "overstated" a number of items of "cost" in its accountings. The "overstatements" thus charged are sufficiently serious to demand the most complete investigation and elucidation.

As Industrial Florida well says:

"The alleged "cost" figures which are said to have been thus "overstated" are the figures which officials of the company have made use of in one or more cases before the Interstate Commerce Commission, which had to do with fixing the charges for refrigeration service on Florida citrus fruits and on vegetables. If we mistake not, they were solemnly sworn to and adduced as evidence.

"Now, what are we to understand?

"Were they correct as claimed, and did the Examiner and his assistants err in their examination of the books, or were they manipulated to the detriment of these Florida industries? We should like to know; Florida should like to know, and nothing less than the fullest information will satisfy.

"The matter is too serious to be passed lightly or glossed over."

**FINAL ARGUMENTS IN  
LINE HAUL RATE CASE**

*Line haul Rate Case*

Date for hearing final arguments in the Line Haul Rate Case before the Interstate Commerce Commission at Washington has been set for June 21st. according to announcement made by J. Curtis Robinson secretary-manager of the Growers and Shippers League, who with C. R. Marshal counsel for the League and T. D. Geoghegan rate expert will represent the League at the hearing. The argument in behalf of the state railroad commission will be presented by Mr. R. Hudson Burr assigned as special counsel.

The Line Haul Rate Case involves the reasonableness of rates on citrus fruits, vegetables, melons, pineapples and strawberries from Florida to all destinations in the United States and Canada and also involves the minimum rates on citrus fruits and vegetables. The case was originally filed March 30th. 1925 and numerous hearings have since been held.

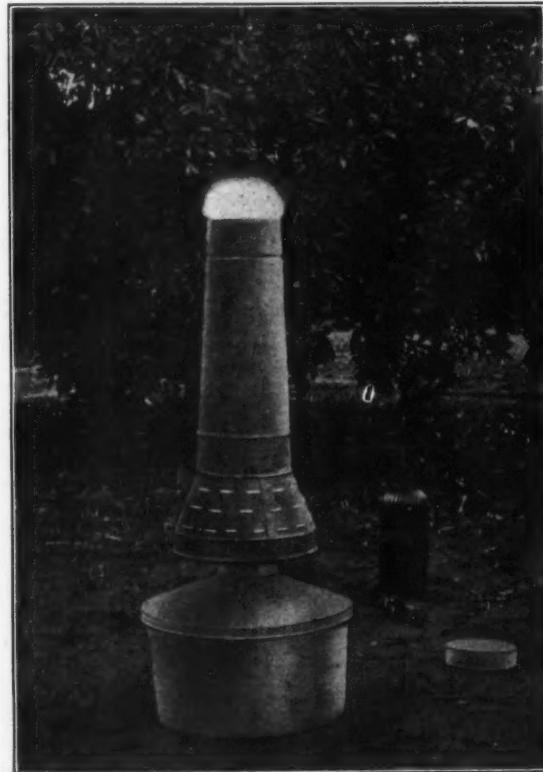
The shippers are hopeful that following the oral arguments the final decision of the commission may be reached in time to affect the rates at the beginning of the 1927 shipping season.

An unsprayed grove is like an undipped cow, so full of bugs that it cannot produce anything else worth while.

The grower of quality fruit seldom makes complaint of selling his fruit at a loss.

Give your bug crop a good feed of insecticide and boost your bank account.

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The Scheu National Jumbo Heater—considered by experts the most efficient heater on the market. Highly efficient—practically smokeless.

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Over 1,000,000 purchased during past five years by Fruit Growers Supply Co. for Sunkist Growers against less than 25,000 of all other makes.

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J. E. PALMER, Florida Sales Manager

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melanose

# The Control of Citrus Melanose

By H. R. Fulton and F. A. Wolf, U. S. Bureau of Plant Industry. Paper Read at Meeting of Florida State Horticultural Society.

The results of experimental work on melanose control, as conducted by the United States Citrus Disease Laboratory at Orlando have been presented at various meetings of this Society and have otherwise been made available to citrus growers by publication in bulletins and in the horticultural press. As a change from this practice we have therefore chosen at this time to gather and present the views and experiences of representative groups of men who grow and market citrus fruit. This information has been elicited by means of a questionnaire covering eleven topics, this was sent to some forty persons and twenty-two replied. Each query will be given in turn together with a summary of the replies.

1. From the standpoint of the marketing agency is it desirable for the grower to control melanose? The answer was unanimously, emphatically and briefly yes. This question, by the way, was the only one on which there was no difference of opinion.

2. Dusting for melanose control, method, cost and effectiveness. Most growers had had no experience with dusting. Nine reported unsatisfactory results. It appeared that under certain conditions with more frequent applications—at least three—dusting might possibly be effective. One estimate of cost gave 4 cents per box of fruit when three applications were made, 3 cents of which was for material and 1 cent for labor. Another gave 3 to 4 cents for two applications. It was suggested that the dust be applied only when the trees were wet with dew and by means of a power duster. One of the difficulties appears to be in getting sufficient dust to stick on the trees to give adequate protection and to be equivalent to that given when sprays are employed. This might be overcome by more frequent dustings. At present dusting for melanose control offers an important field for investigation but cannot be recommended as a general practice with promise of assured success.

3. Pruning out dead wood for melanose control, method, cost and effectiveness, — four growers rely entirely on winter and early spring pruning of dead wood for melanose

control. Ten recognize the helpfulness of pruning and several of these practice pruning and spraying. Seven condemn it as impracticable. One estimate rates pruning as 50 to 70% effective in melanose control. The lowest cost of pruning good sized trees was 5 to 8 cents. Most figures ranged from 25 to 50 cents with an average of 35 cents per tree. The cost of annual light pruning was materially less than for the first pruning of neglected trees. One gave an estimated cost of 3 cents per box of fruit. The concensus of opinion is that best control follows the systematic removal of dead wood each season before the period of infection of young fruits. The three factors which operate against the general adoption of pruning as a means for the control of melanose are cost, the practical impossibility of removing thoroughly the dead twigs and branches, and the press of other grove operations during late winter and early spring. Naturally the pruning of large seedling trees is a more difficult matter than the pruning of well cared for trees that have just come into bearing. Further the annual pruning of young trees at low cost will postpone or prevent the inevitable accumulation of dead wood to the extent that spraying must be employed. Observations show that recently killed wood is most likely to harbor the melanose fungus and that there is little chance of the fungus from the twigs which are on the ground being able to reach the tree.

4. Spraying for melanose control, method, cost and effectiveness. Thirteen replies indicate that satisfactory results are being obtained by spraying, sometimes combined with pruning as an auxilliary measure. Five are definitely opposed to spraying and the remainder have not had consistent results. One spraying with Bordeaux-Oil, 3-3-50 plus 1% oil, is employed by practically all. The usual time of spraying is from the middle of April to the first of May; one reply gives the period from April 10 to 22, and two specify two weeks after blossoming. Several advocate leaving the trunk, larger limbs and tops of the trees uncoated to preserve the friendly fungi and others advise thoroughly coating the entire tree with Bordeaux.

Cost estimates per tree range from a low of 8 to 12 cents to a high of 16 to 20 cents; three estimates were given on a box basis as 2 to 5 cents. It is not always clear whether or not the cost of the follow-up oil spray is included in some of these estimates; in the higher ones it is stated that it is included. Several secured only partial or fairly good results, the majority secured satisfactory control. Only two gave estimates in figures, 60 to 80% control, and reduction of melanose fruit from about 50% to 1%. Three things to be watched are getting the spray on at the right time, making a thorough application, and following up with oil for insect control.

5. Prevention of insect increase after melanose spraying. All replies indicate the need for an oil spray following the use of Bordeaux-oil. June is the preferred time. One prefers to start this work in May, and two indicate early July. One sprays when the scale crawlers can be seen under the magnifier. Three state that two oil sprayings are sometimes needed. The cost of scale control is reported by two to have offset the profits from melanose control. Three special points are mentioned, that it is best to have scale cleaned up ahead of the Bordeaux-oil application, that scale increase need not be serious if the Bordeaux-oil is well prepared, and that directing the spray at the fruit and foliage, leaving the trunks and larger limbs unsprayed, lessens the chance for later insect increase.

6. Spray injury. Is it of sufficient importance to deter from spraying? How can it be avoided? Four consider that the risk of spray injury is too great to justify the spraying. Six have had no injury, twelve have suffered some injury, but consider it worth while to spray in spite of this. The following suggestions are made to lessen or avoid spray injury; test each tank of spray to determine if copper is neutralized; use extreme care in selecting materials, in mixing, and in applying; do not use oil spray when temperature is over 90° F., confine this work in hot weather to early morning and late afternoon hours; use a neutral white oil; add a spreader, such as calcium caseinate or whale oil soap; omit the

oil from the Bordeaux-oil melanose spray. This last may be justified if especially close watch is to be kept on insects, and the oil spraying for them made promptly and with extreme thoroughness. Small acreages and those in which scale insects are already under good control by oil spraying are best suited for the use of the plain Bordeaux, which seems to be safer from the spray injury standpoint than the combination of Bordeaux and oil.

7. Melanose control in relation to decay during the shipping season. Eleven replies indicate that control of melanose cuts down stem end rot; the others have no observations on this point. No definite figures are given. Our own experiments have shown that pruning out dead wood reduces the chances for the *Didiplodia* form of stem end rot much more decidedly than it does the *Phomopsis* or melanose form of stem end rot, while Bordeaux-oil spraying has a reverse relative effectiveness against these two forms of stem end rot. Neither pruning nor spraying as practiced for melanose control completely eliminates stem end rot, and the net effectiveness of either measure will depend on the relative proportions of the two forms of rot present. In general one may expect the reduction in combined stem end rot to run between 25 and 50% for either pruning or spraying, and about 50 to 60% when both of these control measures are carried out.

8. Melanose spraying in relation to ammoniation reduction. The answers are about equally divided between no observations made, doubt that there is a relation, and a positive statement that there is benefit through reduction of ammoniation. One states that an ordinary spraying equals a one half pound per tree application of bluestone to the ground. Another regards Bordeaux spraying as six months quicker in results than broadcasting bluestone. Another prefers working the bluestone into the ground. One mentions an indirect protection against blue mold which is likely to develop excessively in ammoniated fruit.

9. Net profits to the grower from controlling melanose. On oranges. On grapefruit. Unfortunately eight give no reply, or state that they have no data. Only one indicates that no profit was realized, and in this case severe scale infestation necessitated two follow-up oil sprayings, and this resulted in oil injury. One had melanose so completely under control that there was no basis for comparison. Eleven indicate a satisfactory profit. Eight estimates are given in

figures, starting at 25 cents per box, and going equally to 50 cents and 75 cents for an upper limit. No special distinction is made between profits on oranges and on grapefruit, except that in the latter case freedom from melanose may often mean the difference between saleable and unsaleable fruit. Doubtless some of the figures are for differentials in sale prices or returns, and may not have had proper deductions for costs of melanose control or insect control. The gain is stated to be in quality of fruit, freedom from decay, greater production from trees in better vigor, and less tendency to dropage of fruit. There is a general opinion that the fruit is raised one market grade by following proper and effective measures for melanose control. After contemplating the difficulties that beset the way of the pruner, and more especially the sprayer, it is gratifying to note that in the end there are so many who obtained substantial and satisfying money returns from controlling melanose. Our own estimates, based on careful grade counts for sprayed as compared with unsprayed fruit and average market returns for the several grades indicate something like 15 to 25 cents net profit per box for the whole crop after deducting all costs of control. Naturally the largest profits are possible in groves that are subject to melanose in greatest amount.

10. What should be done for melanose control under conditions existing this season? The answers are evenly divided between the three alternatives of pruning out dead wood, spraying with Bordeaux-oil, and combining pruning with spraying. Emphasis is placed on prompt and thorough removal of dead wood, cutting well back into sound wood. There is a general expectation that melanose in all probability will be abnormally abundant this year as a consequence of the abnormal amount of recently killed wood and that bright fruit will be at an extra premium.

11. What system of grading brings the best returns to the grower who controls melanose and produces a high percentage of bright fruit? This question was directed primarily to those engaged in the actual marketing of the fruit. The main question is whether it pays better when there is a high percentage of bright fruit to sell this separately or to mix it with lower grades in a grove run pack. Five indicated that the brights ought to be put in a separate pack, two favored a straight grove run pack. One favored grove run pack for fruit running less than

30% brights, and a bright, golden and russet pack when 50% or more of the crop is bright. The grower who puts time, thought and money into the production of bright fruit, and who faces all the uncertainties of the outcome is entitled to all the premium that such fruit can be made to bring on the market. The question of how to grade the fruit to secure this end deserves most careful consideration.

This review of the present status of melanose control shows that there is still much to be done in devising more satisfactory methods for melanose control, in making improvements on those now in use, in determining more accurately the costs and the profits of control measures as now practiced, and in critically studying grading and marketing practices with a view to making the profits of the grower larger and more certain. It would be a good thing if a larger number of the members of this Society would keep a careful account of the costs of producing fruit of superior quality and of the profits obtained from its sale. This means not only knowing the cost of the special grove operations per box of fruit produced, and the difference in market returns for the several grades of fruit, but also the degree of control secured as measured by the number of boxes advanced one grade or two grades or saved from the cull pile.

Our appreciation is expressed to those who have aided in this survey, which is intended to be an introduction to a discussion from the floor that will bring out the experiences of others on this problem.

### *W. L. M.* Citrus Melanose And Stem-end Rot Controll- ed by Proper Spraying

Citrus melanose, a fungous disease affecting all citrus fruits, is particularly serious in Central Florida where it occurs regularly. Stem-end rot, caused by the same fungus, is responsible for fully 40 per cent of the decay of Florida oranges and grapefruit in transit, on the market, or in the consumer's home. With the citrus crop of Florida increasing rapidly, it is only reasonable to assume that the losses from melanose and stem-end rot will likewise increase unless special measures are taken to prevent them.

Considerable study of the diseases has been made by the United States Department of Agriculture and the

Continued on page 25

# BLUE GOOSE NEWS

Monthly News of American Fruit Growers Inc.



Edited by The Growers Service Department

*Valencias, Prices*

VOLUME 1—No. 12.

ORLANDO, FLORIDA, MAY, 1, 1927

PAGE 1

## LATE VALENCIAS NOW OCCUPY ATTENTION

The market on Florida Valencias since Easter has been generally easier and lower. At the time this is written there is a better tone to prices on good Florida Valencias. Shipments are dropping off rapidly; and it is the consensus of opinion that after May 1st there will not be over 500 or 600 cars of Valencias to be moved from this state.

The grapefruit market has been very druggy. The low prices prevailing generally on Florida grapefruit having been due largely to the excessive supply of large sizes. Good grapefruit of small sizes is selling at very satisfactory prices. From May first on we should see a decided decrease in shipments. While there was upwards of 500 cars shipped the last week in April we should see a decrease of at least 25% the first week in May and at least 50% the second week in May.

The range of frost throughout the North will have a tendency to keep the heavy supply of early fruits off the markets that is expected in normal years. There has been considerable damage done to apples and deciduous fruits on this season's crop; and no doubt the coming crop of apples and deciduous fruits will be decreased materially.

California estimates there will be in the neighborhood of 500 cars of Navel and miscellaneous varieties for shipment after May 1st. These cars in all probability will be shipped by May the 10th. Central California Valencia shipping is under way and a total of 423 cars of Central California Valencia had been shipped for seven days ending April 20th. The quality and color of the fruit was reported to be particularly good and sizes run heavy 150s to 200s.

Many Southern California shipping districts have commenced shipping Valencias and the movement became general the week of May 2nd. Val-

Continued on page 3

## EXPORTS OF ORANGES AND OF GRAPEFRUIT

Preliminary statistics of the U. S. Department of Agriculture, says Commerce Reports issued by the Department of Commerce, credit California with a production of 24,000,000 boxes of oranges in 1926, and Florida with 9,900,000 boxes; Alabama, Arizona, Louisiana, Mississippi and Texas had a combined production of 412,000 boxes. Our average yearly production of oranges during 1921 to 1925 amounted to over 30,000,000 boxes, further says Commerce Reports, and then continues:

The United States exported 2,700,000 boxes of oranges in 1926 as against 1,981,000 boxes in 1925; our orange exports averaged over 2,000,000 boxes a year during 1921 to 1925, or about 7 per cent of average production. Canada is our principal foreign market for oranges, taking 2,273,000 boxes in 1926 as against 1,830,000 boxes in 1925.

Reports indicate that during the past year United States oranges gained a foothold in the United Kingdom, British imports of our oranges in 1926 amounting to 234,000 boxes as against 31,000 boxes in 1925 and varied takings of from 6,000 to 115,000 boxes in 1921 to 1924.

Spain is the principal source of British orange imports; Palestine and South Africa also dispose of most of their orange exports in the United Kingdom. During the past two seasons Spanish oranges suffered heavily from frost, and many reached British markets in wasty condition, but stringent measures have been taken this season with a view to insuring the export of only good-quality Spanish oranges.

Smaller foreign markets for United States oranges in 1926 and the quantities taken were: China, 60,000 boxes; the Philippines, 44,000; Newfoundland and Labrador, 15,000; New Zealand, over 12,000; and Sweden, 12,000.

Continued on page 3

## FIRST CLASS PRODUCT IS GROWERS SALVATION

By F. L. Skelly

Present conditions affecting producers of citrus fruits are similar in many aspects to the conditions affecting other horticultural and agricultural interests in the United States. There is manifestly too great an inclination to regard the farmers' problems as political or social, and a failure to appreciate their actual economic side. What we need is more mathematical experts and fewer politicians in the equation.

For instance there is a general failure to appreciate the fact that the farmer does not, and cannot, pass along increased freight charges to the ultimate consumers. If the cost of producing a box of oranges in January 1917 was, say, fifty cents; and the transportation cost was advanced then twenty-five cents per box, that increase, in practice, amounted to precisely fifty per cent of the grower's cost. If it could be rightly figured on the consumers' ultimate cost such an advance might, as claimed, be negligible; but in practice the industry has not found it to work out that way.

The fundamental basis in the making of railroad rates since the earliest times has been to encourage manufacture. It is time there was thorough and intensive study of the effect of transportation charges upon agriculture and horticulture. Figures now establish that the thirty per cent of the population of the United States engaged in agricultural pursuits is obtaining as its share less than ten per cent of the national income. Such a condition is unsound; but it cannot be cured by legislative juggling nor attention given purely to the political aspects.

The present situation, however, which puts upon the farmers the burden of proof in contesting the alleged unfairness of any particular

Continued on page 2

Adv.

# BLUE GOOSE NEWS

OFFICIAL publication of the American Fruit Growers Inc., Growers Service Department, published the first of each month in the interest of the citrus growers of the state of Florida.

EDITORIAL ROOMS  
502 Yowell-Drew Building  
ORLANDO, FLORIDA



TWO DOLLARS

Two dollars can still buy a great deal, even in these times of high prices. For instance, two dollars will buy a year's membership in the Florida State Horticultural Society.

That organization celebrated its fortieth birthday at the recent Bradenton meeting; that is a long record of usefulness to Florida. Many other organizations and proposed organizations of growers have come and gone in that time. Thanks for the Society's continued activity and usefulness are in good measure due to a number of the older citrus growers in the state who have been untiring in their efforts in its behalf. It remains the one place where citrus growers may meet and discuss their cultural problems, and listen to the advice of the best scientific experts; swapping experiences with others similarly interested regardless of creed, politics or marketing affiliations.

The printed book of the Proceedings of each yearly meeting is well worth two dollars of any grower's money. The privilege of attending the meetings is worth many times that.

Even though the 1927 meeting is over it is not too late to join for this year. Send two dollars to Bayard F. Floyd, secretary, at Davenport, Florida; and in due course you will receive copy of the Proceedings of the Bradenton meeting. Then next April you will want to attend in person the 1928 meeting at Winter Haven.

Adv.

## FRIST CLASS PRODUCT IS GROWERS SALVATION

Continued from page 1  
transportation charges is unjust in that all the data and statistical figures are in the hands of the railroads and the Interstate Commerce Commission, and it requires tremendous expense for growers and shippers to accumulate anything like the necessary figures and facts.

Agricultural and horticultural production further is always subject to fluctuation as to both quantity and quality, even with acreage unchanged. That is Nature's way. There should be a more sympathetic acceptance of this fact in business and financial circles; and agricultural and horticultural producers should not be held accountable to the same standards as are manufacturers where only increases or decreases in raw materials and labor are required to increase or decrease production, and where quality very naturally remains uniform.

However, the prevailing situation being what it is, and the facts being what they are, it is an inevitable conclusion that the economical distribution of citrus fruits, like other fresh fruit and vegetables, can be brought about only after they have been properly standardized in quality, grade and packing. This done the fruit can be merchandised far more simply than if standardization is lacking. Standardization, and standardization only, permits the successful and economical employment of advertising and modern merchandising methods, and likewise permits a fixed policy of operation readily known and understood by growers, the fruit trade and the consuming public.

Profits for the growers under existing conditions lie in a high grade product. The cost of producing, picking, packing, package, and freight are practically the same on first class fruit as on fruit of inferior grades. The selling costs, both wholesale and retail, are relatively much lower on the high grade product. Take pencil and paper and figure these costs, and we find that the grower's profit on any typical sale of high grade oranges and grapefruit is ten times or more per box the profit to be had on the lower grades.

In the markets the day's demand for fruits is entirely lost if not then supplied. The supply can accumulate, but not the demand. So any day missed is a day's market lost. Therefore the necessity for continuous sup-

plies, to make the most of the absorbing power of the markets. Consumers readily enough can temporarily reduce their demands ten per cent, or even twenty per cent; but slight as this may seem it can create a disastrous effect upon market prices if supplies accumulate.

Therefore the need for effective and orderly marketing, avoiding loss of the full daily demand over the entire season; and distributing the total supply well throughout the season of shipments. Given orderly marketing and a standardized product properly advertised and merchandised and growers of good fruit have every assurance of prosperous returns.

Of course, there will be good, bad and indifferent crop years; but the average should be abundantly satisfactory. That, perhaps, is one point on which growers may be criticised by business and financial men in other lines. Every year cannot be good growing year, or a good market year. History and experience demonstrate that. Therefore, these outsiders point out, the growers should in good years accumulate a financial surplus against bad years to come, and not rely upon each crop to an extent that is dangerous.

That criticism may be merited; but the growers in turn may very well make the point that when the time is reached when the thirty per cent of the American population engaged in agriculture and horticulture begin to obtain substantially more than ten per cent of the national income, it may then be a good deal easier for them to accumulate such required surpluses than it is at present.

### The Easy Way

"Bob, when we are married will you continue to give me flowers every day?"

"No, I'll give you a box of seeds and you can grow your own."—Blacksmiths Monthly Journal.

"Why do you think Jim is a little off?"

"Because he wears wooden cloths."

"What, wears wooden clothes?"

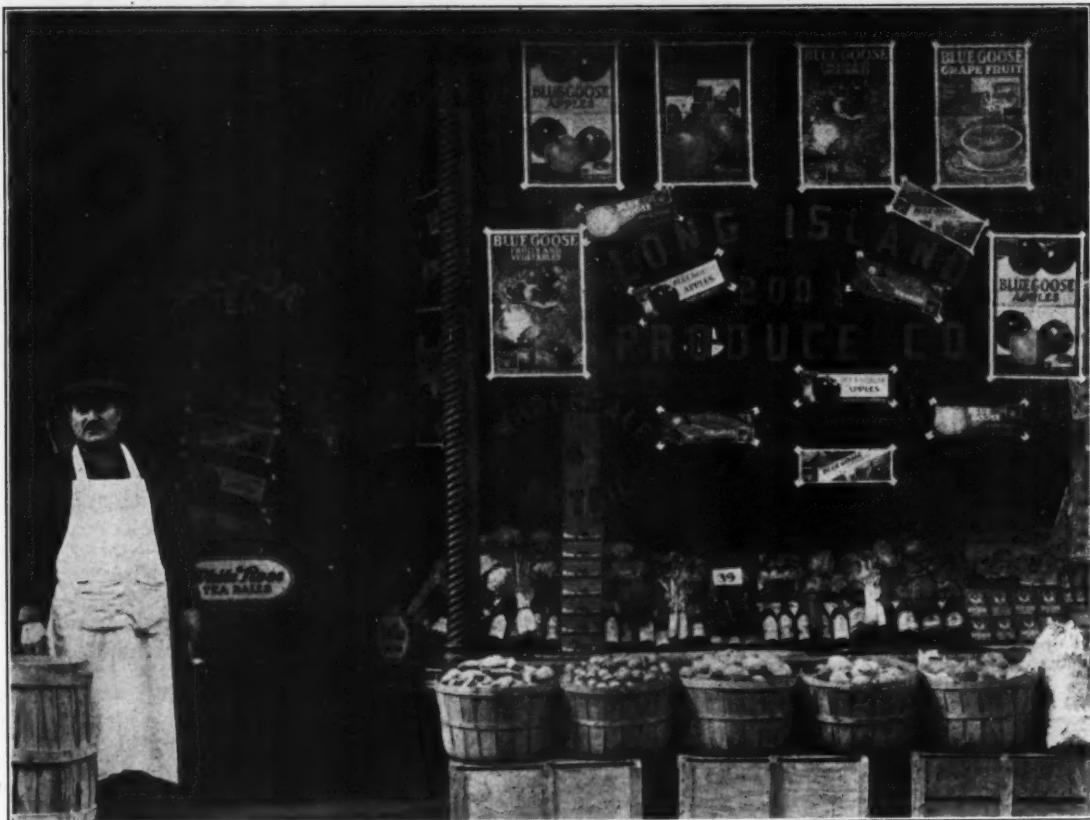
"Yeah; just this morning I heard him say he ws goin, to buy a lumber jacket."—Selected.

### Deuces Wild

Daddy: "What is it?"

Doctor: "Twins."

Daddy: "The deuce."—Grinnell Malteaser.



Careful canvass of more than 7,500 retailers in the New York metropolitan area by expert canvassers recently revealed that more than eighty per cent regularly handled Blue Goose fruits.

#### LATE VALENCIAS NOW OCCUPY ATTENTION

Continued from page 1  
encies in Southern California are somewhat larger than last season and the sizes run heavy to 176s to 210s. The latest estimate placed on the total Valencia crop in California is 31,000 carloads.

Around April the 20th the California Valencias were being quoted at \$3.25 to \$3.75 F.O.B. on Fancy. Cash California quotations on Valencias are generally on a basis of \$3.25 per box for fancy grade.

From the above estimates on Valencias it will be seen that California will have heavy supplies of Valencias to move from now on until next November.

#### EXPORTS OF ORANGES AND OF GRAPEFRUIT

Continued from page 1

Preliminary statistics of the Department of Agriculture credit Florida with a production of 6,900,000

boxes of grapefruit in 1926. California produced 600,000 boxes, Texas 340,000, Arizona 75,000, and Mississippi 1,000. During 1921 to 1925 grapefruit production averaged around 8,000,000 boxes a year.

The United States exported 411,000 boxes of grapefruit in 1926 as against 447,000 boxes in 1925. Our grapefruit exports averaged 316,000 boxes a year during 1922 to 1925, or about 4 per cent of average production. Canada is our largest market for grapefruit, taking 228,000 boxes in 1926. Shipments to the United Kingdom have shown a sharp increase during the past few years, rising from 10,000 boxes in 1922 to 141,000 boxes in 1925, from which they jumped to 157,000 boxes in 1926. This increase in British imports of our grapefruit is due in large part to the "Eat more fruit" campaign conducted in England in recent years.

While not classed as imports, the United States received 684,000 boxes

of grapefruit (value \$2,000,000) from Porto Rico in 1926 as against 781,000 boxes in 1925.

#### Time to Gallop

Two colored gentlemen who had just reduced the population of a farmer's henroost were making a getaway.

"Laws," gasped Sam, "Why you s'pose them flies follow us so close?"

"Keep gallopin', nigger," said Mose, "them ain't flies; them's buckshots."—Labor News.

#### Fine Girl

I luff my goil more effry day. She es so capable, so efficient. She es on the thoid tub at the laundry now, and as soon as she gets on the foist tub, I'm going to marry her.—Sewanee Mountain Goat.

Men no longer hide behind women's skirts. Neither do women.—Arkansas Gazette.

UNIFORMLY



THE BEST

## Good Fruit Pays Everybody---

Good oranges and grapefruit, combining an attractive exterior with a tasty, juicy, delicious interior, please the consuming public, and quickly bring that public back to the fruit stands for more.

For that reason they please, and are profitable to, the retail trade. Likewise they find ready favor with jobbers and wholesalers for the success of the latter is bound up in the success of the retail trade.

Good oranges and grapefruit therefore, when properly packed and sold understandingly, bring suitable reward to the growers who produce them. When further given the benefit of a widely advertised and widely approved trademark, indelibly affixed upon each fruit for its identification, such oranges and grapefruit are free from many of the marketing hazards which affect other fruit not so distinguished.

Florida oranges and grapefruit, no less than other things, are known by the company they keep. More and more growers are coming to appreciate that there is a definite advantage in their fruit being identified as part of the famous Blue Goose family which holds a favorable position before the consuming public everywhere for 365 days in every year.

## American Fruit Growers Inc.

Orlando, Florida



# Citrus Fruits, Marketing

# Marketing Problems to be Discussed

Following a meeting of the Fruitmen's Club in Orlando on April 26th, President, V. B. Newton appointed the following committee to confer with Secretary of Agriculture Jardine in Washington at an early date on the problems affecting the marketing of Florida citrus fruits:

C. C. Commander, Gen. Mgr., Florida Citrus Exchange, F. L. Skelly, Lawrence Gentile, J. C. Chase and W. H. Mouser of Orlando, L. Maxcy of Frostproof, and Bernard Kilgore of Clearwater.

It is probable that the conference with Secretary Jardine will be arranged for a date early in June and in addition to the members of the committee above named the conference will be attended by Mr. Newton as president of the Fruitmen's Club and Nathan Mayo as commissioner of agriculture.

This conference was arranged and the committee named as a result of the appearance of commissioner Mayo before the meeting of the Fruitmen's Club in Orlando on April 26th, in which he outlined methods of co-ordinating the various shipping and distributing agencies and bringing them closer together for the control of distribution and other essential features of marketing the Florida crop.

In his talk before the Fruitmen's Club Mr. Mayo said:

"I am not here this evening to enter into a discussion of the proposed citrus fruit changes in our present law, nor the proposed new legislation prohibiting the shipment of frozen fruit, nor the use of certain sprays to lower the acid in immature fruits. All of these are very important subjects, but I feel they were taken care of by your committee who drafted these measures. I was with your committee when these subjects were agreed upon, and I trust that when you take up these matters later on in this conference you will accept them in full as your committee reported. Endorse them unanimously and forward them to me in Tallahassee at once, that they may reach me in time to be introduced in the present session of the legislature at the earliest possible date.

"Mr. President and Gentlemen, I have come here to meet with you and the Fruitmen's Club for another cause. A cause I consider of vastly more importance and the greatest

problem facing the citrus industry of this state today. A cause in which every grower, packer, distributing agent and organization is deeply interested, and that is, our marketing problem.

"It is useless for me to tell you that the present unorganized ship that is guiding our citrus industry is headed for the rocks. This, each and every one of you knows. With the new bearing groves coming in, and our crops increasing every year, where are we to land if we do not change our course?

"So well is it known that these facts exist, they have attracted the attention of government officials at Washington. A few days ago I was urged by a long distance telephone call to come to Washington at once to confer with the Secretary of Agriculture, Honorable William M. Jardine, and others on this subject. I found Mr. Jardine very much interested in our marketing problems as well as in the state as a whole; so much so that the conference lasted the better part of two days, every detail being gone into thoroughly.

"This plan, gentlemen, will not cause any disorganization of the many independent shippers or cooperative associations, it will, however, coordinate the various shippers and distributing agencies and bring them closer together. It will control shipments, prices, and distribution. It will assist in obtaining better freight rates as well as rendering government financial aid to the industry. This is all I shall attempt to tell you at this time.

"Gentlemen, what Mr. Jardine wants and requests is that the Fruitmen's Club appoint a committee of seven to go to Washington at as early a date as possible to confer with him and other officials on this important subject, and I earnestly urge you to act favorably at this meeting on his request and if it is desired by the Fruitmen's Club I will gladly accompany your committee to Washington and assist in any way I can.

"I understand that the members of this organization are composed largely of the packers and distributors of our citrus fruit, and it is in their control by a large majority, and may I say in all sincerity, that I firmly believe that the destiny of the citrus industry rests in your hands and the destiny of Florida in her soil, our

citrus production leading all others in resources from any single crop. So, may I say, as our citrus industry goes, so goes Florida. Gentlemen, this great and important question rests on your shoulders and is up to you.

"What do you say?

"I want to take this opportunity to congratulate the Fruitmen's Club on your splendid organization and the good work you have done as well as the excellent cooperation you have given the Department of Agriculture."

## METHODS FOR CONTROL OF HORTICULTURAL DISEASES AND PESTS OUTLINED

A section of the 1925 Yearbook of the United States Department of Agriculture covering 150 pages of illustrated text on the subject of diseases and pests of fruits and vegetables has been reprinted and issued as Separate No. 929 for distribution to persons particularly interested in horticultural problems.

Issued as a "separate" this material constitutes a brief text book on the development and spread of horticultural pests and measures formulated for their control. The subject matter is considered under several groups: Fruit diseases and their relation to the fruit industry, fruit insects and their economic importance, diseases of vegetable crops, the insect enemies of vegetables, the relation of nematodes to the fruit and vegetable industries, and birds, mammals, and other animals in relation to fruit and vegetable production.

The successful control of diseases as now practiced comprises many different methods. Some diseases are controlled by a single method, but usually a combination of two or more of these is available to the horticulturist in fighting pests. Some of the methods are spraying or dusting with fungicides, disinfection by means of germicides and fungicides, eradication, quarantine, breeding and selecting resistant or immune varieties, and cultural handling and storage.

A copy of Yearbook Separate No. 929 can be obtained, as long as the supply lasts, by writing to the United States Department of Agriculture, Washington, D. C.

1. Chase & Co. 2. Citrus Fruits  
Marketing

May, 1927

# Seized But Not Guilty

The Following Talk was Broadcast from Station WDBO and WOCB on 293.7 Meters, at 8-55 P.M., from Orlando, Fla., Monday April 11, 1927, By A. M. Pratt, Sales Manager, Chase & Co., Orlando, Fla.

An important court decision has just been rendered in Boston, Mass., favorable to Chase & Company, growers and marketing agents of Orlando. A car of oranges, packed by one of their larger growers and shipped and marketed through them, was seized by the Bureau of Chemistry in Boston on March 28th, and ordered condemned unless it could be proven legally that the car did not exceed the tolerance permitted by the regulations governing frost damaged oranges.

Being thoroughly convinced that the seizure was uncalled for and was either based upon suspicion or wrong samples, or explainable only by some other unknown mysterious cause, Chase & Company got busy—hired one of the best lawyers available who specializes in the fruit and produce business, and on April 6th, ten days later, was able to get a hearing before the court. The judge ruled that the Bureau of Chemistry did not furnish sufficient evidence in face of the evidence shown by Chase & Company, to warrant seizure or condemnation, and the car was ordered released, thereby realizing over a thousand dollars for the grower that would have been lost if the case had not been fought with the dispatch and persistence shown.

Here are some interesting sidelights on the case. It came from one of the most careful growers and packers in the State. Many cars from this same grove had been shipped and accepted, all without complaint as to frost. Yet when this car, which was sold on an fob order, arrived in Syracuse it was turned down and efforts made to secure a big concession as the wire indicated that "government men were raising Cain on any fruit showing signs of dryness". Being unwilling to be bluffed into uncalled for allowances the car was diverted to Boston to be sold at auction. It arrived and was unloaded in the auction shed, but just before the sale was to take place the goods were formerly libeled or seized by the Bureau of Chemistry which claimed that thirty five percent of the car showed marked drying.

This appeared so preposterous to all concerned, including the agent, S. J. Shallow & Company, Boston, who had seen and cut samples from the car, that immediate steps were taken to fight things out to a finish,

as the whole thing had the ear-marks of spite work originating by a tattle-tale attitude on the part of the customer who was peeved because he could not force Chase & Company into granting his concession. Raising Cain on the part of government men in Syracuse looked like raising easy money to the customer, but it didn't work, and doubtless the car was reported to "get even".

Here's the evidence that convinced the judge and would convince any fair-minded experienced fruit man that the Bureau of Chemistry's action in seizing the car was puzzling, as well as mistaken. The Bureau of Agriculture Inspection Department made an inspection of the shipment after it was unloaded in the auction shed at Boston, and their report referring to frost damage reads as ranging from two to twenty percent averaging eight percent; frost damage being heaviest in large sizes, car showing five percent decay.

On top of this Chase & Company ordered samples to be taken on which a chemist's analyses would be determined. Eighteen out of the twenty oranges analyzed by the chemist showed ten percent more juice than that established as a standard for normal specific gravity on California oranges as per Paper No. 9, Citrus Experiment Station, University of California, Riverside, California. Even the two driest oranges tested showed a higher specific gravity test than California's own printed standard, yet here was a whole car of Florida oranges about to be dumped because some official had concluded it was dry. The Bureau of Chemistry report to the court read thirty-five percent marked drying, in the face of the Department of Agriculture's report showing eight percent, and in face of the chemist's report showing only ten percent, that was below California's normal juice content.

Then to clinch the evidence, four prominent car-lot receivers of long standing in the market were asked to examine the shipment and act as witnesses at the trial, and their joint inspection indicated seven percent frost damage.

In the face of these four men, the chemist's analyses and the government inspection, the Bureau of Chemistry had drawn their samples and drawn their conclusions not

openly, but without the knowledge of the owner or our representative. Had it been customary to be less secretive and to draw the sample in a manner that at the time satisfies the shipper's representative that the sample is representative—had the government then in a friendly way also shown the shipper's representative that the cutting of the samples actually showed thirty-five percent of them as being marked evidence of drying, the Bureau of Chemistry would have been in a less embarrassing position in its claim which could not be substantiated with the preponderance of evidence so strong to the contrary.

All of which should satisfy the Bureau of Chemistry, as well as all growers and shippers in Florida, that even Uncle Sam's men may be human and subject to error, and that it would be along sound lines of business procedure if Uncle Sam told his men that inasmuch as he was supposed to supervise interstate commerce it would be more business-like to confer with the shipper or grower involved in the transaction, and in a friendly way command and hold his confidence by openly making the test and drawing the samples together, where there would be no misgiving in the minds of either party as to accuracy, fairness and justice.

## BLACKBURN COMPILES MANUFACTURING DATA

B. L. Blackburn, supervisor of registration and census enumerator for Hillsborough county, has three assistants employed in the work of compiling complete statistics for the year of the manufacturing resources of Tampa. The work includes enumeration of manufacturing industries of every description, capital invested, the number of persons employed, weekly payrolls, gross and net incomes. The report will also embrace repairs and additions made and the cost thereof.

Complying with instructions of Nathan Mayo, state commissioner of agriculture, Mr. Blackburn will on July 1 begin an enumeration of all agricultural resources of the county. Several additional assistants will be employed in this work.

Persons engaged in compiling the agricultural report will at the same time complete the report of manufacturing industries of the county.

# Fertilize and Spray Citrus Trees Now

M A Y						
SUN.	MON.	TUE.	WED.	THU.	FRI.	SAT.
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

New Moon  
1st 30th

First Quarter  
8th

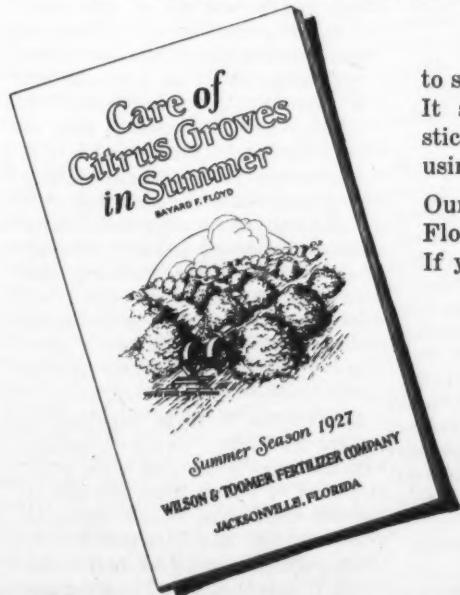
Full Moon  
16th

Last Quarter  
24th

## Ideal Fertilizers

should be in the soil when the summer growth flush starts, following the summer rains. Don't wait for the rains, but apply your fertilizer now. IDEAL FERTILIZERS recommended for use now are particularly adapted to the needs of the tree and fruit at this season.

Fertilizing and Spraying at the RIGHT TIME means better results and money saved. ORDER IDEAL FERTILIZERS TODAY.



### Fasco Flo-Oil is Sure Death

to scale insects and white flies; also cleans up sooty mold. It spreads without a spreader and sticks without a sticker. It's a pleasure to use it. Spray citrus trees now, using one gallon to 64 gallons water.

Our Service Organization, headed by Prof. Bayard F. Floyd, Horticulturist, is at the command of every grower. If you need a new spray outfit, write for our catalogue.

Wilson & Toomer Fertilizer Co.,  
Jacksonville, Fla.

Gentlemen: Please send to me a free copy of  
"Care of Citrus Groves in Summer."

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

Wilson & Toomer Fertilizer Company JACKSONVILLE  
FLORIDA  
Florida Agricultural Supply Company ORLANDO  
FLORIDA

# Citrus Fertilizer Experiments

R. W. Ruprecht, Chemist, Florida Agricultural Experiment Station, Presented before the Meeting of the State Horticultural Society at Bradenton, April 13, 1927.

The time allotted for my talk is entirely too short to try and cover the broad field of citrus fertilizers so I am going to add another word to the title and make it read "Citrus Fertilizer Experiments". I am going to give you an outline of the various citrus fertilizer experiments that we are conducting, with a brief report on the results obtained to date. Please remember, however, that any statement of results is subject to change as further evidence or results are obtained.

The oldest fertilizer experiment is the so-called Dieback Grove at the Citrus Experiment Station at Lake Alfred. As the name implies this experiment was begun in connection with the study of Dieback. As most of you know, five or six years ago it was generally believed that organic nitrogen was a cause of Dieback. In order to prove or disprove this point as well as for other reasons which need not be mentioned, this experiment was begun in the spring of 1921. The grove covers ten acres and is planted as follows:

Eight rows of Lue Gim Gong oranges on sour stock,

Eight rows of Pineapple oranges on rough lemon stock,

Five rows of Marsh Seedless grapefruit,

Two rows of Silver Cluster grapefruit,

Two rows of Dancy tangerines.

The grapefruit and tangerines were budded on rough lemon stock. The grove is divided into two series of five plots each. The sources of ammonia in the mixed fertilizer is as follows:

Plot 1 & 6 Nitrate of Soda,

Plot 2 & 7 Sulfate of Ammonia,

Plot 3 & 8 Dried Blood,

Plot 4 & 9  $\frac{1}{2}$  dried blood,  $\frac{1}{4}$  nitrate of soda,  $\frac{1}{4}$  sul. of am.,

Plot 5 & 10 Stable manure.

Plots 1 to 5 inclusive received their phosphoric acid from super-phosphate while plots 6 to 10 will receive it from steamed bone. The potash on all the plots is derived from high grade Sulfate of Potash.

Up to date no marked differences have developed. This past year the fruit from Plot 8 receiving its ammonia from dried blood, and phosphoric acid from steamed bone was rather rough skinned. The interior of the fruit, however, looked, tasted and analyzed as good as any of the other plots. The trees on Plot 3 seem

to be somewhat smaller than the balance of the grove. Contrary to general belief the fruit from the manure plot has been of just as good quality as that from any other plot.

The second oldest experiment is a comparison of high versus low potash fertilization. This is also located at the Citrus Experiment Station. This was begun in the fall of 1921 with trees about four years old, on a two and a half acre grove,—half Tardiff oranges and half Marsh Seedless grapefruit. This grove is divided into six plots fertilized as follows:

Two plots receive 3% potash in the fertilizer at each application; two plots receive 10%, one plot 5% and one plot 3% in the spring, 5% in the summer and 10% in the fall. All of the plots receive the same amount and kinds of ammonia and phosphoric acid.

To date we have not found any striking differences due to the various amounts of potash in the general appearance, taste and sugar and acid content of either the oranges or the grapefruit. Chemical analysis has shown that the fruit from the 10% potash plots contained more potash than the fruits from the other plots. Whether this difference would affect the carrying quality of the fruit we cannot say at this time. We are planning a few tests on this point for next season. The results to date would, therefore, seem to indicate that we can use considerable less potash in our fertilizers.

The third experiment is being conducted in the Indian River section at Vero Beach. In this experiment we are trying to determine whether or not we can substitute muriate of potash for the high grade sulfate of potash as a source of potash in citrus fertilizers. The experimental grove contains the following varieties all budded on sour stock: Dancy tangerines, Pineapple and Valencia oranges, and Marsh Seedless grapefruit. The grove is divided into seven plots fertilized as follows:

Plot 1, potash from high grade sulfate three times a year.

Plot 2, muriate of potash three times a year.

Plot 3, low grade sulfate of potash three times a year.

Plot 4, high grade sulfate once, high grade muriate twice.

Plot 5, low grade sulfate once, high grade muriate twice.

Plot 6, high grade sulfate twice,

high grade muriate once.

Plot 7, low grade sulfate twice, high grade muriate one.

All of the plots receive the same amounts of ammonia and phosphoric acid.

This experiment was begun in 1923 and the trees are now six years old. We have just harvested the third crop of fruit. The results to date, not including this year's crop have shown no difference either in tree growth, yield, or quality of fruit as determined by general appearance, taste, or chemical analysis. Of course, it is too soon to make the broad statement that we can substitute the muriate of potash for the H. G. sulfate. However, the results do indicate that you can safely substitute the muriate now and then when the sulfate is too high in price. Should further crops show that the muriate can be safely used, it will mean a saving of about \$150,000 per year in the citrus fertilizer bill. Nothing has been said in regard to the low grade sulfate of potash which we are using. As some of you probably know this material also contains magnesium and was used to see if this material will have any effect on the quality of the fruit. The above experiment is being repeated or duplicated at the Citrus Experiment Station at Lake Alfred. This experiment has, however, been running only a little over a year so no results can be expected.

This covers the experiments under way with citrus in the citrus belt. We did have another experiment with citrus on muck soil at Davie, west of Ft. Lauderdale. The hurricane and subsequent floods about killed all the trees so the experiment had to be discontinued. We are in hopes, however, of again starting some on this type of soil.

In addition to these experiments we are conducting two experiments with Satsuma oranges in West Florida,—one at Round Lake and one at Panama City. Here we are trying to determine how late it is safe to fertilize Satsumas and how much ammonia it is safe to use. The trees are just coming into bearing so no yield figures are available. It is noted, however, that the cold weather this past winter affected the high ammonia fertilized trees less than the other trees.

We are planning to increase our citrus fertilizer experiments both

May, 1927

with Satsumas and round oranges. We are planning to start an experiment to determine whether we can apply all of the phosphoric acid and potash in one application, applying only ammonia the remaining times. Or if we can cut down the number of fertilizations to two instead of three. This, I believe, will be possible on the better grades of soil at least. Also, we are going to try and determine how much phosphoric acid a tree needs. As I have stated on previous occasions, I believe that we are using more phosphoric acid than is necessary. While the large amounts are probably not doing any harm, they are losing money which the grower needs. We are also planning to make further studies on the potash requirements of the trees.

Many of you have probably been hearing and reading about concentrated fertilizers. I believe that the time is not far distant when we will be using fertilizers containing four and five times the plant food that our present fertilizers contain, thus making a considerable saving in our freight and handling charges. In order to be in a position to advise growers intelligently when this time comes, we are planning to start some experiments in the use of concentrated fertilizers on citrus in cooperation with the Bureau of Plant Industry of the U. S. Department of Agriculture.

As you have no doubt noticed none of our experiments have shown any striking differences between the different treatments. Ordinarily this would indicate that the experiment had failed its purpose. However, in our case the opposite is true. In practically all of our experiments we are trying to show that the new or different way of fertilizing your trees will give you just as good crops as you are now getting and at a saving of cost to you. We will be satisfied, for instance, if we continue to get as good quality of fruit from the low potash fertilized trees as from the high or normal potash fertilizer. Likewise, we will be satisfied if the muriate of potash fertilized trees give us just as good crops of high quality fruit as the sulfate of potash fertilized trees, or if the inorganic forms of ammonia give us as good crops as the organics, or the combination of organic and inorganic now generally used. If all of these experiments show that the new way is just as good as the old it will mean a considerable saving in your fertilizer bill. I think none of you will object to spending any less money on your grove.

## THE CITRUS INDUSTRY

### CITRUS MELANOSE AND STEM-END ROT CONTROLLED ED BY PROPER SPRAYING

Continued from page 16

conclusions published in Department Bulletin 1474-D, which is now ready for distribution.

Infection with this organism may take place at any time of the year when rainy periods occur while growing parts are in a susceptible stage. Leaves of the orange and grapefruit are susceptible to infection from the time they emerge from the bud until they become distinctly tough; this usually requires about two or three weeks. The fruits of the orange and grapefruit are at first susceptible also, but they become progressively resistant with increasing size; oranges develop practical immunity when they reach about  $1\frac{1}{2}$  inches in diameter, whereas grapefruits do not become practically immune until they reach about  $2\frac{1}{2}$  inches in diameter. This means that Florida fruits are seldom susceptible after June 10.

Spraying with the standard 3-3-50 Bordeaux mixture containing 1 per cent oil as emulsion, if properly timed, has been found to give excellent control of melanoze even under adverse conditions. Ordinarily the most opportune time for this single application is just in advance of the May rains, which seldom set in before the 5th of the month. If the spraying is delayed until after these rains have continued for some time, melanoze is not prevented. Sprays applied even before the blossoms open may reduce the chances for fruit infection somewhat.

Whenever applications of Bordeaux-oil emulsion are made in the spring they should by all means be followed in late June by a thorough application of oil emulsion of high efficiency to prevent excessive increases in scale insects. If this necessary oil spray is omitted the fruit is likely to be ruined and the tree seriously damaged by these insects.

A copy of the bulletin, Citrus Melanoze and Its Control, will be sent free of charge as long as the supply lasts. Requests should be made to the United States Department of Agriculture, Washington, D. C.

American Forest Week was observed by the United States and Canada this year from April 24-30. There is more interest in forests and the forest week than ever before.

The loss due to the cattle grub has been estimated at from \$50,000 to \$100,000,000 annually, for the United States.

Twenty-five

The year 1927 marks the tenth anniversary of the beginning of Smith-Hughes work—the teaching of agriculture in the high schools of the nation.

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# IMPRESSIONS

By The Impressionist

S. F. Poole of Lake Alfred, presiding in the chair in the closing hours of the Bradenton meeting of the Florida State Horticultural Society, found it incumbent upon himself to bring that meeting to a close. As he pronounced the words, "The fortieth annual session of The Florida State Horticultural Society is now at an end," it was evident that his memory flashed backward over many previous sessions. His voice faltered and his emotion was apparent.

Those present pronounced it a good meeting, with much of real informative value included in the various papers and addresses. The good people of Bradenton gave the Society just the sort of welcome and reception which it most appreciates—a splendid place in which to hold its meetings uninterrupted, and an abounding hospitality which never the less was not allowed to interfere with the business before the gathering.

Winter Haven was selected as the place for the 1928 meeting. Clearwater, which contested strongly for the meeting, was out of luck. For two years the meetings had been held away from the central portion of the citrus area. The time is ripe for a big meeting with a large attendance, hence the readiness to favor Winter Haven for next year. The history of the Society's meetings goes to show that those meetings which are held at points most readily accessible to the greatest numbers of growers, produce the largest attendance. Registrations at such meetings run from two hundred to fifteen hundred, generally according to the location of the meeting.

Nobody wishes to confine the Society's meetings to any particular section. If Clearwater will bring in its bid strongly next year, it should have a good chance for the 1929 meeting.

Every man or woman in Florida who owns and operates ten acres or more of grove ought to be a member of and attend the meetings of the Florida State Horticultural Society. Just being a member and reading the

printed and bound Proceedings doesn't quite fill the bill. Those who imbibe their specialized horticultural knowledge in that way really miss a lot. They miss the splendid fellowship of such meetings, and likewise they miss the side-discussions during recesses, some of which frequently bring out most valuable information.

The thing which must most strongly impress any thoughtful person with respect to these meetings is the earnestness and purpose which lies behind them. They are totally unlike the average convention in their lack of frivolity and frolic and their serious attention to the business in hand, particularly in the constant and serious attention given to the selected speakers. Yet they are most pleasant occasions withal.

To Mrs. Lord, wife of Professor E. L. Lord of the College of Agriculture, goes the brown derby with two palms, in signal recognition of being Florida's most patient woman. Our contact with Mrs. Lord over a period of years largely has been at Horticultural Society meetings, and generally from eight o'clock in the morning until midnight she is to be found patiently waiting—waiting for her untiring husband whose time and attention are being absorbed in some nearby group in earnest discussion. Never yet have we seen her manifest impatience, or other than interest. Her work is valuable, too, for without her attentions Professor Lord undoubtedly would miss his meals, and even more sleep than he does.

The impression remains of a most pleasant series of conversations had with J. M. Stanton of California who is in Florida in connection with the sale of Scheu heaters, which he and associates now control. During recesses we had some interesting comparisons of conditions in the citrus industries of California and Florida. Mr. Stanton has spent his life in the perishable fruit business in California, and is wonderfully well informed.

One of the very interesting items, to us, came out in connection with the talk of T. Ralph Robinson, U.S.D. A., where he dealt with the present

dissatisfaction in California with sour orange rootstock, and noted the California tendency to sweet orange. That is a possible development which Florida should watch closely. We had thought the California citrus authorities most thoroughly sold on sour or-



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May, 1927

ange. For years they have been importing sour orange seed from Florida for rootstock purposes. Now, it seems, they are finding some lack of satisfaction with it, in trees planted twenty years to twenty-five years ago.

The State of California always has backed up its citrus growers better than has Florida. The appropriations which have been available for the California scientific experimenters have made it possible for them to establish with accuracy many definite conclusions, which still are somewhat matters of conjecture with us here. We can well watch closely to see with what degree of unanimity the California growers turn back to sweet orange rootstock.

By the way, Mrs. T. Ralph Robinson is another woman who in course of accompanying her husband is no stranger to horticultural gatherings, in Florida or elsewhere; and yet she manifests always the closest attention to the speakers and the discussions, and keeps in closest touch with all that is going on.

Miss Isabelle Thursby of the Florida State College for Women won approval with her paper on Citrus Fruit Utilization. She left an impression upon us of knowing her citrus. Miss Thursby is a Florida woman who for many years was out of Florida, journeying all over the United States and fourteen counties in Wisconsin. She brings to her work a sympathetic understanding of Florida and Florida conditions, if not to say of Florida people, which is most valuable.

We might comment in detail upon the various most interesting papers and addresses, but that isn't our job. These are just some outstanding impressions of the month, and rather naturally the Bradenton meeting stands out strongly in our memory.

We relish contact with Dean Wilmon Newell of the College of Agriculture and Dr. O. F. Burger of the Experiment Station. We appreciate them as scientists and as men; but we do not like to walk down the street with them. They make us look, and worse yet, feel, like a little boy; and in as much as we top five feet eleven we normally feel we are a fair sized man. The Good Lord must have been occupied with a problem of distribution, as they say in citrus marketing, when he worked out their architecture.

J. C. (Jim) Twyman, long promi-

## THE CITRUS INDUSTRY

nently identified with Chase & Co., who embarked in the real estate business during the Gold Rush, is now winding up frost insurance adjustments for the Hartford. He tells us there will be frost insurance available for next season's citrus crop.

American bulb growers have made remarkable progress in the industry, considering the short time that has been devoted to it, and the outlook for production of bulbs in this country is decidedly bright—Dr. David Griffiths, investigator for the U. S. Department of Agriculture.

Club boys and girls of Florida have their own paper, Florida Pep-

## Twenty-seven

per. It is published by the Agricultural Extension Division and State Home Demonstration Department and distributed to all club members.

Electricity is slowly but gradually assuming a place of greater importance in rural communities. It is estimated that half of the farm work could be lightened by the use of electricity.

Department Bulletin 1462-D, just issued by the United States Department of Agriculture, sums up some investigations of American bulbs under glass. Copy of the bulletin can be obtained by writing to the department.

# Citrus Growers!

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"A&G" Formulas are prepared by practical experts; the materials used are genuine and specially imported; and mechanical perfection is insured by modern machinery and methods.



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## Final Review of Florida Citrus Season

Mr. W. H. Hall, of the Bureau of Agricultural Economics, U. S. Department of Agriculture who has maintained an office in Orlando during the citrus shipping season, operating in co-operation with the shippers of the Fruitman's Club, closed the Orlando office April 23, and proceeded to Hastings where he will have charge of the potato work during the shipping season.

Just prior to closing the Orlando office for the season Mr. Hall issued the following final review of the 1926-27 citrus season in Florida.

### Unusual Season

The Florida citrus season is entering the final stage, although movement will not be entirely over until late May or early June. It has been an unusual season in many respects, characterized mainly by two outstanding features—a severe wind-storm in September, and two freezes, the first on January 10th and the last on January 15th, when minimum temperatures of from 24 to 30 degrees were reported in many sections, and freezing temperatures extending over almost the entire citrus district. The storm damage was estimated at about 2,000,000 boxes, which was heaviest in Dade and Lee Counties, with a considerable loss in DeSoto and Manatee Counties, extending north to Polk and Pinellas Counties. The damage from the two freezes was placed at about 50 to 60% of the remaining orange crop, 15 to 20% of the grapefruit and 80 to 90% of tangerines. These figures were supposed to cover all fruit damaged to the extent of ultimately showing appreciable dryness, and it was of course not expected that such fruit would be shipped. However, it seems reasonably certain that much badly damaged fruit found its way out of the State into the terminal markets. This has unquestionably proven injurious to the citrus industry. Operators have generally labored industriously to prevent this, else a much worse condition would inevitably have been encountered.

### Production

In October the Government estimate was reduced to 15,000,000 boxes having been made for damage from the September storm. After the last freeze the estimate was further reduced to 13,500,000 boxes (8,000,000 oranges and 5,500,000 grapefruit). These figures covered only sound fruit, and in arriving at a comparative basis it would be nec-

essary to add shipments of fruit excluded by the revised estimate. Unfortunately no figures are available along this line. For years there has been more or less talk about overproduction, under-consumption, etc., but in spite of this, production has steadily increased and citrus growers who have exercised good judgment in caring for their groves and marketing their fruit seem to have received at least a fair return on their investment, if averaged over a period of years. There is of course such a thing as overproduction. There is a saturation point in the production of every farm commodity, but one is not justified in passing judgment as a result of one bad year, nor until every known agency has been brought to bear to place the industry on the highest plane possible.

### Shipments

The heaviest week's movement of oranges was during the week Dec. 5-11th, when a total of 1801 cars moved. Peak shipment was Dec. 11th, with 402 cars. During the previous season the peak movement was on December 17th with 265 cars and heaviest week's movement Dec. 12-18th with 1880. The first car of oranges moved on October 2nd. Total movement of oranges from Florida to April 17th was 20,815 cars, compared with 17,751 to same date last season and a total movement of 19,754.

The first car of grapefruit was shipped on September 20th, with peak movement of 154 cars on November 27th, compared with peak of 202 cars on December 5th the previous season. The heaviest week's movement was 768 cars Nov. 7-13th, compared with 695 cars for the heaviest week's shipments for previous season, Feb. 27 March 5th. Total movement to April 17th this season was 14,206 cars compared with 12,149 to same date last season, and total movement of 14,222.

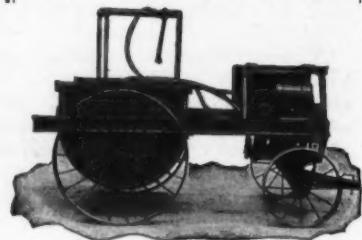
Mixed citrus shipments to April 17th this season was 4,045 cars, compared with 2,805 to same date last season, and a total for the season of 3,074. Grand total of oranges, grapefruit and mixed citrus to April 17th this season amounted to 39,066 cars and the final total for the previous season was 37,050 cars.

### Competition

California offers keen competition to Florida oranges during the entire season, almost to the point of exclu-

sion in the far western markets. The amount of Florida oranges shipped to points west of Chicago is relatively light, and yet there is noted a de-

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cided tendency within the last few years to push farther and farther into what has been commonly referred to as California territory.

Texas, Arizona and the Imperial Valley of California are increasing their acreage of grapefruit, and will each year offer increased competition this being especially true of Arizona and Texas.

#### Quality

The early varieties of oranges were unusually small, and ran heavier than usual to russets. The fruit also remained sour longer than during most seasons. These things, coupled with the large amount of scarred fruit resulting from the September storm, and the frozen fruit resulting from the two January freezes, placed Florida fruit at a decided disadvantage, when it is considered that California had an unusually fine crop of Navel, both as to quality and size. It is not to be wondered that California oranges outsold Florida oranges under the existing conditions. The Valencias are showing better sizes than the early varieties, some sections running rather heavy to large sizes, 126's and larger. This has resulted in reducing the discount on small sizes of Seedlings. Aside from dryness on account of the two freezes, the quality appears about normal.

The quality of grapefruit throughout the season has been generally good. The fruit has run heavy to large sizes (36's to 54's) and with the advance of the season the demand for large sizes has diminished, until by the middle of April it was almost impossible to sell 36's f. o. b., with very little demand for 46's. The advisability of picking for size is a much mooted question, but there is no disputing the fact that large sizes could have been disposed of easier two months ago than now. The Duncan variety has averaged much larger than the Marsh Seedless. Trade preferences during most of the season have been for 64's to 80's, with a fair demand for 54's.

#### Prices

Several sharp breaks in the terminal markets have made it a rather bad year for Florida operators. Heavy buying of groves before certain of these breaks resulted in substantial losses, and the margin between the grove and the terminal market has been relatively small, so the operator has found difficulty in making up his losses even though there has been a generally steady market aside from the breaks referred to, the most disastrous one occurring late in November. While at first sight it might appear that the year as

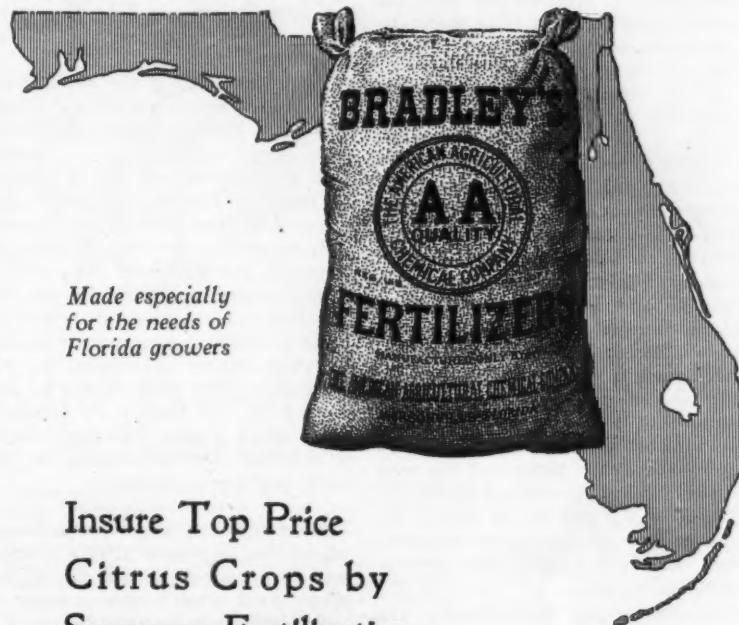
## THE CITRUS INDUSTRY

a whole has been an unsatisfactory one, and so it has doubtless been from the operators' point of view, but all things considered, the grower is in a better position than during certain other years. Consider the fact that there has been shipped to date more fruit than was shipped all of last season, also that much of this has been of inferior quality and undesirable sizes, and against these facts compare prices with those of other years and the correctness of the above statement will become apparent. The fact that high prices may have been hoped for or expected does not make it a bad year. The

true situation should be recognized in endeavoring to arrive at a definite conclusion.

While the market on both oranges and grapefruit is rather dull at the present time, (April 21) there is a pretty fair demand at good prices for suitable sizes. Valencias, 150's to 216's are selling \$3.75-\$4.00 carloads f.o.b. usual terms for U. S. 1, with about 50c discount on the Choice or U. S. 2 grade. 126's and larger are being discounted 25c to 75c per box. Seedlings are about through and have been selling at about a dollar a box less than Valencias, with discounts

Continued on page 32



## Insure Top Price Citrus Crops by Summer Fertilization

CITRUS fruits, today, are standard items in the American menu. And people have come to demand the highest quality.

Bradley's Fertilizers, applied in time to meet the summer season, strengthen the trees and encourage them to produce firm fruit with added juiciness.

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exact needs of Florida growers. In perfect mechanical condition, and so balanced in their plant-foods that they are readily available to the growing trees. Backed by sixty years of experience in manufacturing fertilizers. Years of practical tests on our own groves prove their ability to produce maximum yields of top-quality fruit.

## BRADLEY'S "AA QUALITY" FERTILIZERS

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THE AMERICAN AGRICULTURAL CHEMICAL COMPANY  
Jacksonville

Howey, W. J.

## Florida's Citrus King

By Ray A. Frame

W. J. Howey smokes a briar pipe and smiles. At one time during his twenty years' experience in Florida he was up against it, but he still smiled. The smile hid some deep wrinkles but the smile and the briar pipe remained. Today W. J. Howey is the guiding spirit of the world's largest citrus development. The briar pipe remains his constant companion. His monthly payroll amounts to a little over \$118,000. Between April 1926 and April 1927 he banked in Florida banks over \$2,500,000.00 in spot cash. It requires ten separate corporations to handle his huge citrus business. He has already over a half million trees. When his development is completed 3,000,000 bearing trees will cover the 60,000 acres of hill land at Howey-In-The-Hills. An estimated revenue of \$45,000,000 will be pouring into the owners of Howey groves each year. Howey-In-The-Hills is his fifth citrus development in Florida. He developed groves around Winter Haven, Star Lake, Dundee and Lake Hamilton. These places are successful and thriving towns. Howey-In-The-Hills is his final monument to the citrus industry of Florida. The above gives a brief pen picture of the man who has aptly been called Florida's citrus king. To get a complete picture of the man you would have to come to Howey-In-The-Hills and get in his family car and go the rounds with him and hear him tell about it all in his personal and modest way.

Howey groves are probably the only orange or grapefruit groves sold in Florida on a proposition that the first eight commercial crops will return the original investment plus all cultural costs and taxes. This is his written guarantee. But he points out the guarantee is not worth the paper on which it is written unless the proposition itself will hold water.

In order to make that guarantee good Mr. Howey first selected the spot he thought altogether suitable for profitable citrus production. He then got together an organization complete in every detail. He built his own nurseries. He employed the best horticulturist money could hire. He selected Marsh Seedless grapefruit and late Valencia oranges as the varieties he would feature. He does not believe in 57 varieties. He is a specialist.

The success of W. J. Howey may be summed up in just one word—**QUALITY**. He claims Florida could sell at top prices 100,000,000

boxes of citrus fruits, providing all the growers in the state produced only fruit of the highest **QUALITY**.

### \$200,000 PER YEAR TO ADVERTISE STATE SET BY COMMITTEES

Tallahassee, Fla. — Two hundred thousand dollars per annum for advertising Florida to the country has been agreed upon by joint legislative committees on publicity, immigration and agriculture, and the matter will be presented to the legislature within a day or two, it was announced today.

At a meeting of the three joint committees and commissioner of agriculture, Nathan Mayo, and other agricultural officials, it was agreed that \$200,000 a year should be used in publicity for the state, and that the money must come from the general inspection fund, eliminating the necessity for additional taxation.

The money, if allowed by the legislature, would be used in yearly intensive advertising campaigns including the placing of exhibits at big state fairs. The fund would be dispensed by the bureau of immigration, which is now operating under a \$50,000 allowance made at the 1925 legislative session.

An application of 100 pounds acid phosphate, 50 pounds nitrate of soda, and 25 pounds of potash, mixed, has given good results with pastures in tests conducted by the Florida Experiment Station.

The velvet bean, a very valuable leguminous forage crop for the South, was developed largely as a result of tests conducted by the Florida Experiment Station 25 to 30 years ago.

Some people who pride themselves on their great heart are merely excusing themselves for lack of backbone.—Motor Chat.

The good farmer plans his work and works his plan.

## MORE "BRIGHTS"

The highest prices go to the brightest fruit. Why raise any other kind?

Spray your grove with VOLCK. It kills all varieties of citrus scale, mealy bug, white flies, and red spider; cleans the trees of sooty mold; and is a big help in preventing the ravages of rust mite.

Has an extremely wide margin of safety and may be used any time of year without hazard to fruit and foliage . . . Does not

wash off in the summer rains. See your nearest VOLCK dealer and arrange for VOLCK-control this season.

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# Cold Process Oil Emulsions

By W. W. Yothers, Orlando, Fla.

Few citrus growers make oil emulsions for their own use. In fact few fruit growers in other sections make their own insecticides of any kind. While there are many objections offered by the fruit grower to making their own insecticides one of the greatest is the heating or boiling usually recommended. The heating of materials consumes much time, fuel, increases the wastage, and is annoying generally. To avoid this several cold mix formulae are here given for the benefit of those who desire to make an effective insecticide for scales and white fly. They are not new to science nor to many citrus growers.

#### Caustic Potash Fish Oil Soap

Oil	gallons	2
Water	gallons	1
Soap	pounds	2

#### Procedure:

Add the soap to the water, stir and then add the oil; pump 2 or 3 times. This emulsion mixes perfectly with lake or soft water but does not make a perfect mixture with hard or deep well water. It will keep indefinitely.

#### Ground Glue

Oil	gallons	2
Water	gallon	1
Glue	pound	1

#### Procedure:

Dissolve the glue by soaking 10 or 12 hours in water or by heating and add the oil; pump 3 times. This formula is very easily made but fermentation sets in rapidly. It should not be made longer than 3 days before it is to be used, although sometimes it keeps several weeks.

#### Skimmed Milk Powders

Oil	gallons	2
Water	gallon	1
Milk powders	ounces	14 to 18

#### Procedure:

Add the skimmed milk powder to the water slowly beating the mixture vigorously; add the oil and pump 3 times. This formula is very easily made. Although fermentation is liable to start soon it may keep several days. It should be used however before 3 days after being made.

#### Calcium Caseinate

Oil	gallons	2
Water	gallon	1
Calcium caseinate	ounces	4

#### Procedure:

Add the calcium caseinate to the water by slowly sifting and beating the mixture with a beater composed of baling wire. This step is important. Add the oil and pump 2 or 3 times. While this keeps better than the glue or skimmed milk powder formulae,

it should be used soon after being made.

#### Kaolin

Oil	gallons	2
Water	gallon	1
Kaolin	pounds	2-3

#### Procedure:

Add the kaolin to the water and let it dissolve without stirring. It will dissolve in 30 minutes if it is not stirred by it will take many hours or days if it is stirred. Add the oil and pump 2 times. Great care should be observed that an excess of kaolin

be avoided as the resulting emulsion will be too stiff for practical purposes.

#### PORT TAMPA CITY SELLS STREET PAVING BONDS

Port Tampa City's \$41,000 street improvement bond issue has been sold to the James G. Yeats Company at par, Mayor J. W. Lynn announced yesterday. The Yeats company also was awarded the street work some time ago.



## What Prof. Mapes Did in 1847 Is Benefiting You Today

As an expert chemist, Prof. James J. Mapes—originator of Mapes Manures—was famed far and wide. But he was not satisfied to be famous, he also wanted to be right; he recognized the place where the laboratory test should leave off and the crop test should begin. So, in 1847, Prof. Mapes bought a farm in New Jersey to ask the crops themselves what fertilizing materials they liked best.

Prof. Mapes believed that the crop could tell the value of fertilizing materials better than the laboratory. He set the crop up as the final judge. He put crop results far ahead of laboratory analysis. Today, every good farmer knows that two fertilizers of the same analysis may give widely different results because of the difference in the materials from which they are compounded.

Mapes Manures have always been formulated on the basis of crop results. The crops tell us what materials they like best—we put these materials into Mapes Manures. They are first made right, then they are priced as low as possible.

The little additional cost is returned to you many times over in increased crops of better quality. Try Mapes this year. Compare the crop yield, the crop quality and the crop profits with the results from any other fertilizer you can buy. Mapes "costs little more—worth much more".

# MAPES Manures

cost little more ~ worth much more

#### The Mapes Formula & Peruvian Guano Co., Dept. 16 Jacksonville, Florida

Will you please add my name to your mailing list so that I will receive the leaflets on Citrus Culture? This does not obligate me in any manner.

My grove consists of \_\_\_\_\_ bearing trees and \_\_\_\_\_ young trees.

My grove is located at \_\_\_\_\_

My name is \_\_\_\_\_

My address is \_\_\_\_\_

# The Mysterious Power of Oranges

By Arthur William Scott in "How to Eat"

Those days are gone forever!  
Which days?

Those days when we were rewarded for being good by receiving a large juicy orange—perhaps once a week.

Today we know that in order to maintain our average strength and build reserve strength to ward off coming dangers we must eat oranges daily.

The acid condition that we have produced by eating foods that ferment in the digestive organs cannot withstand the attack of the neutralizing juices of the orange. And right here let it be said that this process of overcoming acidity by supplying orange juice may be likened to the clearing of a bowl full of inky water by letting the faucet run. If you let a glass full of water flow into the bowl the effect is not seen. But if you allow more water to run into the bowl the dark water will begin to clear. And so it is with orange juice taken into the stomach. If you eat one orange the result will hardly be noticed. But eat three oranges or six during the day the effect of this alkalizing juice will be noticed for it will mix in a more equal proportion and thus neutralize the condition.

A test that is worthy of the attention of all who are interested in the fullest expression of life is given as follows: Of course if you are a regular orange eater (eating six or more oranges a day) you will not find yourself in the following condition. But assuming that you have caught a heavy cold—one of those fuzzy ones that make your friends remark—procure a dozen and a half oranges for juicing and drink the juice of six oranges between the hours of 7 p.m. and 10 p.m. Sip a glassful each hour and eat no carbon foods during this period or before retiring that night. Then during the following day eat another six oranges up until 7 o'clock and finish the day with the three glasses of juice, sipped an hour apart. (Do not drink the orange juice in gulps—if you are thirsty drink water!)

Oranges and grapefruit possess an abundance of the element magnesium which is a vital cooler, relaxer and laxative to the system. Thus the juices of these two priceless fruits prevent the brain tissues from becoming inflamed from emotion or hard mental work.

Screaming nerves, fretting over details, worry and over-anxiousness

are some of the indications of a lack of magnesium in the system.

Oranges also contain a large portion of the chemical calcium, which builds teeth and bones and gives vitality to the cells. Children whose mothers have been aware of the value of oranges and have eaten them abundantly during the pre-natal period, have started on the road of life with less handicap than the children whose mothers called oranges a luxury. As calcium gives long life so we must look upon oranges in this light.

The skin of the orange, which is now being ground into the juice at many drinking fountains, is filled with the element, potassium. Potassium builds muscles and heals injuries. It reduces pain and balances the body, causing versatility. Potassium or orange juice attracts oxygen to the body, giving enthusiasm, activity and tone.

Thus we find that oranges are literally golden eggs that grow on trees. And when we think of the cost of a dozen oranges and the enormous value in health giving elements as compared to the same money value in devitalized, mucus forming foods such as spaghetti, white bread, cake or peeled potatoes, what serious minded mother is going to trifle with the strength of her sons and daughters? Oranges thus prove an everyday necessity and the analysis of the values of foods explodes the old fallacy that fruit of health is a luxury and "foodless" food is practical.

## FINAL REVIEW OF FLORIDA CITRUS SEASON

Continued from page 29 of 50 to 75¢ per box on cars running heavy to 250's and smaller. Desirable sizes of Duncan grapefruit are selling at a general range of \$2.50-2.75 for U. S. 1, with 25¢ off on 54's and 50¢ off on 46's. Marsh Seedless started moving about four weeks ago and has averaged about 25¢ per box premium over the Duncan variety. The big auction markets have weakened on both oranges and grapefruit during the last week or ten days and this has resulted in a downward price tendency at this end, also lighter buying.

Baby chicks need careful handling and management. Study and watch them and see that they develop normally.

## THERE IS A DIFFERENCE IN FERTILIZER

The next application of Fertilizer that you apply to your grove will mean considerable as to the

Quality of Fruit

Use

## Orange Belt Brands



"Quality Fertilizers"

for

"Quality Fruit"

## The Newark Company

Incorporated  
CARLOT DISTRIBUTORS  
COMMISSION MERCHANTS  
FRUITS AND PRODUCE  
159 SO. ORANGE ST.  
New Haven, Conn.

## Latest Farm News Direct from the Nation's Capital

KNOW the latest FACTS right from Washington, the center of farm news. The National Farm News. Is an independent weekly newspaper edited for farmers and rural folks by men who know agriculture. Prints truthful "first hand" news and information not found in other newspapers. NOTHING ELSE LIKE IT. Special trial subscription offer 10 weeks for . . . .

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D. C.

# University of California to Hold 4th Summer Session Subtropical Horticulture

By Robert W. Hodgson, Director of Subtropical Horticulture  
College of Agriculture

For the purpose of furnishing high school teachers of agriculture and students of colleges of agriculture in California and elsewhere an opportunity to secure training in subtropical horticulture in a section where the growing of subtropical fruits constitutes an industry of major importance, the College of Agriculture, University of California, is planning to conduct its fourth Summer Session in Subtropical Horticulture this year. The work will be given at the Citrus Experiment Station, Riverside, and the courses will cover the six weeks' period June 25 to August 6. The session will be given by the Division of Subtropical Horticulture, with cooperation from the Divisions of Entomology and Plant Pathology of the Citrus Experiment Station.

The courses offered will consist of twelve units of junior and senior work, equivalent to courses given in the College of Agriculture at Berkeley, and yielding university credit. While in the main the courses are designed to duplicate the curriculum of the Division of Subtropical Horticulture as offered at Berkeley, there will be two courses given which are not available elsewhere, these two dealing with diseases and insect pests of subtropical fruits. While designed primarily for university students and high school teachers and therefore not intended as practical courses for fruit growers, the session will be open to interested auditors upon payment of the usual auditor's fee.

The testimony of students who have attended previous sessions indicates that the courses given have been unusually successful in combining the features of lecture, laboratory and practical field work, which has not been possible at Berkeley.

A strong teaching staff has been organized to give the courses, including some of the most prominent specialists in the state. Special lecturers will be employed to present the different phases of subtropical fruit problems. The courses planned are as follows:

## 1. Subtropical Horticulture. The Citrus Fruits.

This course, consisting of lectures, laboratory, and field studies, is designed to acquaint the student with the fundamental and essential re-

quirements of successful citrus fruit production, and the present status of our knowledge concerning the solution of the problems confronting the growers, and the cultural and other practices employed by them. Attention is given to such subjects as stock selection, bud selection, propagation, planting, cultivation, irrigation, fertilization, harvesting, marketing, varieties, breeding, orchard yield variation and yields and returns. The laboratory and field work brings the student directly in touch with the industry as it is conducted in California. 4 units.

## 2. Subtropical Horticulture. Subtropical Fruits of Lesser Importance in California.

This course, consisting of lectures, laboratory, and field studies, is designed to give the student a knowledge of the problems confronted by the growers of certain subtropical fruits and the practices employed by their production. The following fruits will be given consideration: the fig, olive, avocado, pomegranate, date, Oriental persimmon, carob, jujube, loquat, feijoa, tuna, pistachio, guava, cherimoya, and white sapote. 4 units.

## 3. Subtropical Horticulture. Diseases Affecting the Subtropical Fruits.

This course will include the study of the diseases of the Citrus fruits, grapes, walnuts, olives, avocados, figs, persimmons, dates, loquats, pomegranates, and other subtropical fruits. Special attention will be given to the diagnosis of the different diseases, the life history of the causal organism, and the methods of control that have been devised. 2 units.

## 4. Subtropical Horticulture. Insects Affecting Subtropical Fruits.

Designed to acquaint the student with the insect enemies of subtropical fruits in California. The student will be expected to learn to identify all of the principal enemies, become familiar with their life histories and the character of the damage caused by them. Attention will also be given to the various methods of control by spraying, fumigation, parasites, and the like. 2 units.

For further information concerning these courses, inquiries should be addressed to the Dean of the College of Agriculture, Berkeley, California.

## Place YOUR Orders Early

We want to disappoint no one, but the volume of orders already placed with us for delivery makes it advisable to place orders as promptly as you can. We intend to maintain quality regardless of our output, and early sales far exceed our best expectations.

## NEW Flexible Non-Bruise Picking Bag

The practical bag for practical people. Experienced packing house managers hail it as the biggest advance in the business in the last dozen years. Cannot bruise the fruit or the picker. Makes work, lighter, faster, and puts the fruit into the field box unbruised and in the best possible condition.

Does all this and yet is the most inexpensive picking bag on the market — gives most wear per dollar.

**ASK FOR SAMPLE:** If you are a buyer or packing house manager and haven't yet seen this new invention, we will send sample on approval. Write on your letterhead, please.

## Non-Bruise Picking Bag Company

519 East Amelia Avenue  
Orlando, Florida  
(Patent Pending)

Thirty-four

## WINTER HAVEN GROWERS HOLD MONTHLY MEETING

Members of Winter Haven Growers Inc. held their monthly meeting in Winter Haven April 14.

Discussion was had of market conditions past and present, particular attention being given to the late Valencia outlook. Review of sales up to the time of the meeting was reported as generally most satisfactory.

Winter Haven Growers Inc. are marketing a large tonnage of both oranges and grapefruit through the American Fruit Growers Inc.; and the Belle of Winter Haven brand under the Blue Goose trademark has been holding a prominent place in the markets. Growers shipping through the packing house of Winter Haven Growers Inc. comprise a very large number of the most prominent citrus men in and about the City of A Hundred Lakes.

## TAMPA MAN AWARDED CONTRACT FOR FOUR NEW STATE BRIDGES

Tallahassee, Fla.—Contracts were let today by the state road department for the construction of about \$375,000 worth of bridges and overhead crossings in Sarasota, Lee, Indian River and Lake counties. Bids

## THE CITRUS INDUSTRY

were opened on April 28.

The contracts let follow:

Road 5, Sarasota county; four bridges, over Phillipi creek; Shackett creek, Venice bay and Hatchet creek, awarded to E. W. Parker Jr. of Tampa. The bridges are to be of concrete construction and the contract includes the construction of two bascule spans.

Lee county, bridges on state road No. 5 between the Charlotte county line, and the Caloosahatchee river awarded to E. W. Parker of Tampa.

Road 4, over head crossing over Florida East Coast Railroad in Indian River county, awarded to Murphy and Prior of Orlando.

Road 2, Lake county, overhead crossing of A. C. L. railroad at Maccott, awarded to Hayes and Kroeger of Clermont.

The woman who makes a hobby of her house work will make it a great deal easier as well as get more fun out of it.

near Altamonte Springs, Fla. For particulars write H. A. Lunquire, 41 N. W. 29th St., Miami, Fla.

**FIVE ACRES** and a town lot, all for \$700.00 Biggest bargain in Florida. Certain money maker. We want reliable salesmen to present this meritorious proposition to investors. Sumter Gardens and Bushnell Park lots. Every purchaser highly pleased. Florida Garden Land Company, Box 1759, St. Petersburg, Florida.

**WANT TO SELL HALF INTEREST IN FIFTEEN ACRE SATSUMA BEARING GROVE ON HIGHWAY NEAR PANAMA CITY, ROBT. LAMBERT, OWNER. FOUNTAIN, FLA.**

**SATSUMA BUDWOOD** from Bearing Trees. Hills Fruit Farm, Panama City, Fla.

**FOR SALE**—Pineapple land in winterless Florida. \$15 an acre. Almont Ake. Venus, Fla.

**WANTED**—To hear from owner of land for sale. O. Hawley, Baldwin, Wis.

## MISCELLANEOUS

**\$1950.00 TO \$3500.00** income per acre from limes; want partner, exclusive lime culture. Jas. N. Foreman, 4026 2d Ave. S., St. Petersburg, Fla.

**FROSTPROOF** cabbage plants—500 \$1.00 postpaid. Expressed \$1.00 thousand. Wholesale Plant Co., Thomasville, Ga.

**ADVERTISING RESEARCH WANTED**: Specialist in foods and nutrition, drugs, disinfectants, and insect control. Successful record in copy work and syndicate writing. Desire assignments in fruit products. Can introduce new facts and put new punch into educational advertising. Mrs. Susha P. Moore, P. O. Box 523, Chicago.

**CITRUS FRUIT TREES**: All varieties at very attractive prices. No order too large or too small. Either mixed trees for home planting and replacements, or large orders for commercial plantings. Sizes  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{8}$ , 1,  $1\frac{1}{4}$ ,  $1\frac{1}{2}$ , and 2 inch caliper. On sour orange and rough lemon root. Finest quality, clean, straight, well rooted from prolific bearing stock. Our quality and price will save you money. Let us know the variety, size and number of trees which you will require and our special quotations will be given. Florida Citrus Nursery, P. O. Box 617, Tampa, Fla. Phone M-5062.

**FOR SALE CHEAP**—Eleven acres high, rocky citrus land; 4 acres cleared with small house, and large nice bearing orange trees full of fruit. Nicely located

**WHITE WYANDOTT** Cockrels, regal strain—the best in the country, direct from

May, 1927

Martin pens. Utility and show birds \$5.00 each; also eggs for hatching \$5.00 per 15. W. A. King, Gen. Del., St. Petersburg, Fla.

**SOUTHDOWN SHEEP**, White Rocks, Toulouse Geese, Guineas, Angora and Milk Goats, Circular free. Woodburn, Clifton, Va.

**WANTED**: Competent man to work ten acre farm near Ocala, Florida, profit sharing basis. Young tangerine grove, many fruit trees, rich soil. Big money in onions, poultry. Comfortable, furnished house, good barn. R. F. D. 41, Burbank, Fla.

## FARM—GROVE—HOME

**22 ACRE** large bearing grove; modern two-story, 8 room house, completely furnished on third largest lake in state in thriving town; good roads, church, schools; complete line farm implements and tools. P. F. Cloonan, Yalaha, Lake County, Fla.

**HIGH BLOOD PRESSURE** easily, inexpensively overcome, without drugs. Send address. Dr. J. B. Stokes, Mohawk, Fla.

**FOR SALE**—200 pure bred white Leghorn hens \$1.25 each, any quantity. Cockerels \$2 each. Fain's Hatchery, Edison, Ga.

**PUREBRED PULLETS FOR SALE**—White Leghorns and Anconas ready to ship. Barred Rocks and R. I. Reds shortly. Several hundred yearling White Leghorn hens now laying 70%. Write or wire for prices. C. A. Norman, Dr. 1440, Knoxville, Tenn.

**LAREDO SOY BEANS**, considered free from nematode, excellent for hay and soil improvement. Write the Baldwin County Seed Growers Association, Loxley, Alabama, for prices.

**MILLION** Porto Rico Potato Plants, \$2.50 1000. W. W. Williams, Quitman, Ga.

**FARMER AGENTS**: Make \$25.00 weekly selling Comet Sprayers. Profitable winter employment. You take orders. We deliver and collect. Commissions weekly. Established 35 years. Particulars free. Rusler Co., Box C-18, Johnstown, Ohio.

**JERSILD'S Invincible Strain White Wyandottes**, bred for eggs, meat and beauty since 1905; hatching eggs, baby chicks, breeders and young pullets. Catalog free. Peter Jersild, Foley, Ala.

**EARLY BEARING** Papershell Pecan trees budded or grafted and guaranteed. Great shortage this year. Write for catalog today. Bass Pecan Company, Lumberton, Miss.

We Collect Notes, Accounts, Claims anywhere in world. No charges unless collected. We have collected in every State in Union, Canada and foreign countries. 25 years experience. MAY'S COLLECTION AGENCY, 28 Tinker Building Orlando, Fla.

**FOR SALE**—All varieties bananas and citrus trees. D. A. Nigels, Palm Harbor, Fla.

**STRAWBERRY PLANTS**, Send \$2.50 for 500 Missionary or Klondyke. \$4.50 per 1,000. Ready now. John Lightfoot, East Chattanooga, Tenn. 10-12

**RUNNER** peanuts—Spanish peanuts Early speckled - Osceola - White Chinese and Bunch Velvet Beans. All varieties peas and Soybeans. Large or small lots. H. M. Franklin, Tennille, Georgia.

**BABY CHICKS**: Sent C.O.D. Pay when they arrive. Leghorns \$16.00 per 100; Bars, Reds, Minorcas, Orpingtons, \$13.00; Mixed \$15.00. Postpaid. Florida Baby Chicks, Lakeland, Fla.

**LOOK—APRIL PRICES**—Norman's chicks South's oldest, largest plant. Flocks tested & accredited. Quality. Thousands daily. Ready now. Fully prepaid and guaranteed. Write or wire. Per 50 100 500 1000 B. & W. Leg., Ane. \$7 \$14 \$65 \$125 Orps. Rocks, Reds, 8 15 73 140 W. Orps, W. Wyand., 9 16 78 150 Assorted chicks 6 12 55 100 Sensible eat. with new helpful brooding ideas. Buckeye brooders, quick shipment. C. A. Norman, Knoxville, Tenn. (L.B.C.A.)

**BANANA PLANTS**—15,000 Stokley improved Cavendish banana plants. Strong stocky plants guaranteed true to name. Original plants from Stokley Nurseries. Price twenty cents each at plantation or fifteen cents each in lots of 1000 or more plants. Minimum order accepted 100 plants. Sherwood Banana Plantation, Wade H. Webb, manager, Winter Haven, Fla.

## CLASSIFIED

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The rate for advertisements of this nature is only five cents per word for each insertion. You may count the number of words you have, multiply it by five, and you will have the cost of the advertisement for one insertion. Multiply this by the total number of insertions desired and you will have the total cost. This rate is so low that we cannot charge classified accounts, and would, therefore, appreciate a remittance with order. No advertisement accepted for less than 50 cents.

## REAL ESTATE

**WILL EXCHANGE** West Texas cattle ranch for unimproved or improved land in Florida. What have you? Give price and full particulars. T. E. Bartlett, 8410 McKinley Ave., El Paso, Texas.

**"BOOK OF TRUTH"**  
For planters of new groves  
is yours for the asking.  
Write Today.  
**OCKLAWAHA NURSERIES INC.**  
"Pedigreed Citrus Trees"  
Lake Jem., Florida

**FOR SALE CHEAP**—Eleven acres high, rocky citrus land; 4 acres cleared with small house, and large nice bearing orange trees full of fruit. Nicely located